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ADVERBIALS. LANGUAGE CURRICULUM V, TEACHER AND STUDENT VERSIONS.

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THIS 11TH-GRADE LANGUAGE UNIT ON ADVERBIALS IS DESIGNED TO SHOW THAT THE TRANSFORMATION WHICH ACCOUNTS FOR THE EMBEDDING OF RELATIVE CLAUSES ALSO EXPLAINS THE PRESENCE OF ADVERBIAL CLAUSES, THEREBY REINFORCING THE PRINCIPLE THAT THERE ARE GENERAL RULES WHICH EXPLAIN ECONOMICALLY MANY COMPLEX LANGUAGE STRUCTURES. THE TEACHER VERSION FOR THE UNIT CONTAINS INTRODUCTORY MATERIAL COVERING (1) ADVERBIAL PREPOSITIONAL PHRASES OF MANNER, INSTRUMENT, LOCATION, DIRECTION, REASON, FREQUENCY, AND DURATION, (2) THE EMBEDDING OF ADVERBIAL CLAUSES IN ADVERBIAL PHRASES, AND (3) THE ABILITY OF TRANSFORMATIONAL GRAMMAR TO EXPLAIN STRUCTURAL AMBIGUITY. THIS IS FOLLOWED BY AN ANSWER KEY TO THE EXERCISES CONTAINED IN THE STUDENT VERSION. FOLLOWING A BRIEF INTRODUCTORY REVIEW OF BASIC PHRASE STRUCTURE RULES FOR THE MANNER ADVERBIAL, THE STUDENT VERSION CONTAINS MAJOR DISCUSSIONS ON EXPANSION OF PHRASE STRUCTURE RULES, ON ADVERBIAL PHRASES CONTAINING RELATIVE CLAUSE EMBEDDINGS, AND ON THE SYNTACTICAL ORDER OF ADVERBIALS. EXERCISES IN CONSTRUCTING BRANCHING DIAGRAMS FOR SENTENCES CONTAINING VARIOUS TYPES OF ADVERBS ARE APPENDED TO THE FIRST OF THESE DISCUSSIONS. SEE ALSO ED 010 129 THROUGH ED 010 160, ED 010 803 THROUGH ED 010 832, TE 000 195 THROUGH TE 000 220, AND TE 000 227 THROUGH TE 000 249. (RD)

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ADVERBIALS

Language Curriculum V

Teacher Version

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Teacher Version

ADVERBIALS

This unit is intended as a review of earlier material on adverbials and as an introduction to some kinds of so-called phrasal and clausal adverbials. The review material speaks for itself, but some remarks may be useful in regard to new material.

We have limited our explicit treatment of phrasal adverbials to prepositional phrases. Prepositions as a grammatical class can be defined as forms which are followed by an NP, which are followed by pronouns in the objective case only, and which are not inflected (do not change form for tense, etc.). This last particular distinguishes the preposition from mid and transitive verbs. Some prepositions themselves are analyzable, for example, in front of, in back of; but we have not analyzed them in the unit. These forms should be considered as rewrites of prep on the same hierarchical level as of, to, for, etc.

The prepositions most commonly appearing in manner phrases are in and with (along with its negative without). With and in phrases dominated by Manner are likely to be confused with with and in phrases of other types, particularly instrumental phrases. Notice the following examples:

(1) He did it with glee.
(2) He did it with mirrors.

Sentence (2) is related to the question What did he do it with?. Sentence (1) of course is not related to this question. Sentence (2) contains the instrumental phrase.

Notice also

(3) He went to town in a hurry. Manner
(4) He went to town in a train. Instrument

(4) is related to What did he go to town in? whereas (3) isn't.

By phrases, although they are often related to How? questions, are not related to In what manner? questions. The sentences

(5) He went by plane.
(6) She reached me by phone.

contain instrumental phrases. Sentences 2, 4, 5, and 6 are related to the question By what means?. Manner adverbials are not related to that question.

The locative and directional adverbials can also be distinguished by their relationship to two different questions, At what place?, To what place?. Notice that the questions contain distinctive prepositions. In the case of Loc, the preposition is usually at; in the case of Dir, it is usually to. There is another kind of directional adverbial which indicates direction from, e. g. He departed from the station. Those which we

have symbolized as Dir are those which indicate direction toward. A complete grammar would of course indicate both. It might have a rule of this sort:

$$\text{Dir} \longrightarrow \left\{ \begin{matrix} \text{dir}_{\text{to}} \\ \text{dir}_{\text{from}} \end{matrix} \right\}$$

You might want to discuss this with your students and see what they come up with. We would suggest putting a variety of sentences on the board and asking the students if they see any difference in the kinds of directional adverbials the sentences contain.

Reason adverbials typically contain the preposition for, though not all phrases with for are reason adverbials. Adverbials of time are related to the question When? (At what time?). We have used Tm as the symbol for this class of adverbials and have included only those which indicate at what point in time. These should not be confused with a different class of adverbials which seem somewhat related to time--those of frequency and duration. Frequency adverbials are related to the question How often?. Some typical ones are sometimes, frequently, often, every Saturday, each night. Durational adverbials are related to the question How long a time?. This class includes forever, for an hour, through the evening, all month. As with the adverbials of direction, a complete grammar would indicate the distinctions between these three classes.

The phrasal adverbials give rise to the clausal ones in an interesting way. It turns out that operations very similar to those which embed adjectival clauses also embed the adverbial ones. Hence the two sentences

(7) I went there at the time.
(8) She was there at the time.

by already quite familiar kinds of rules, can give rise to

I went there at the time when she was there.

and then to

I went there when she was there.

The possibility of embedding, of course, depends on the presence of identical NP's in consumer and source. This requirement is met by (7) and (8). The structural unit wh is added to the identical NP of the source. And then the NP to which wh is added is pulled to the beginning of its dominating sentence. The preposition of the prepositional phrase comes along too. You will recognize this as the general adjective clause embedding.

I went there at the time.
She was there at the time. } $\Longrightarrow$

I went there at the time [she was there at wh + the time] $\Longrightarrow$

I went there at the time [at wh + the time she was there] $\Longrightarrow$

I went there at the time [at which she was there.]

However, there is another way the derivation can go. The phrase, at wh + the time, since it is dominated by Tm, may become when. This can be demonstrated by the question related to I went there at the time. When did I go there?. Thus

I went there at the time [at wh+the time she was there] ⟹

I went there at the time when she was there.

These steps are merely a refinement of the adjectival clause embedding discussed in an earlier unit.

A deletion transformation can delete the locative phrase of the consumer.

I went there at the time when she was there ⟹

I went there when she was there.

The derivation of locative clauses is parallel to that of time clauses. The derivation of directional clauses is similar, though not precisely parallel. Parallel manner adverbial clauses are lacking:

*He did it how I told him.

The Reason clauses are derived in a quite different way. Notice that they are what are traditionally called appositive noun clauses.

He went for the reason [that he was tired.]

Including these derivations in this unit would take us too far afield.

It should be noted that the Tm prepositional phrase of the consumer may be deleted only if its NP is the time. In other words

I was there when she was there

is a reduction of

I was there at the time when she was there

and of no other sentence.

Similarly

I found the key where she put it

is derived by deletion only from

I found the key at the place where she put it

and no other sentence.

Though we will not go into all the reasons for this, it can be said that only those elements which can be reconstructed can be deleted from a sentence. For example if we have a sentence

I was at the spot where the accident occurred.

for which we want to reconstruct the underlying structure, we can assume that where came only from at the place. We would have no way of discovering what else it might have been. For this reason there is a general requirement that deletions can take place only when the deleted material can be uniquely reconstructed. That is, given a result sentence and a description of the deletion transformation that produced it, it should be possible to reconstruct the one particular sentence that was altered by the transformation.

If we could delete items from both (A) and (B) below to produce (C), we would not be able to reconstruct uniquely.

(A) I was at the spot where the accident happened.
(B) I was at the place where the accident happened.
(C) I was where the accident happened.

We would not be able to say whether at the spot was deleted or at the place. This cannot be allowed. Hence we must choose whether it will be (A) or (B) which can be deleted from to produce (C). The choice is not arbitrary. We cannot go into all the reasons for choosing place over spot, but it should be noted the place can be compounded with some to produce someplace. There is an indefinite quality about it. Note that time can also make part of an indefinite pronoun--sometime.

This unit on adverbials seems a logical place to illustrate one of the most interesting powers of transformational grammar, its ability to explain structural ambiguity (also called structural homonymy). The example in the student version of this unit is a typical instance of structural ambiguity.

(X) They questioned the man in the library.

may be (1) the result of a deletion from

(Y) They questioned the man who was in the library.

or it may be (2) a kernel sentence with the description

NP + Aux + Verb + Loc.

If (X) has derivation (1) it means what (Y) means. If (X) has derivation (2) it means that the interrogation took place in the library. Ambiguity results when two different paths through the grammar lead to the same result, or when a given sentence can be given two different structural descriptions.

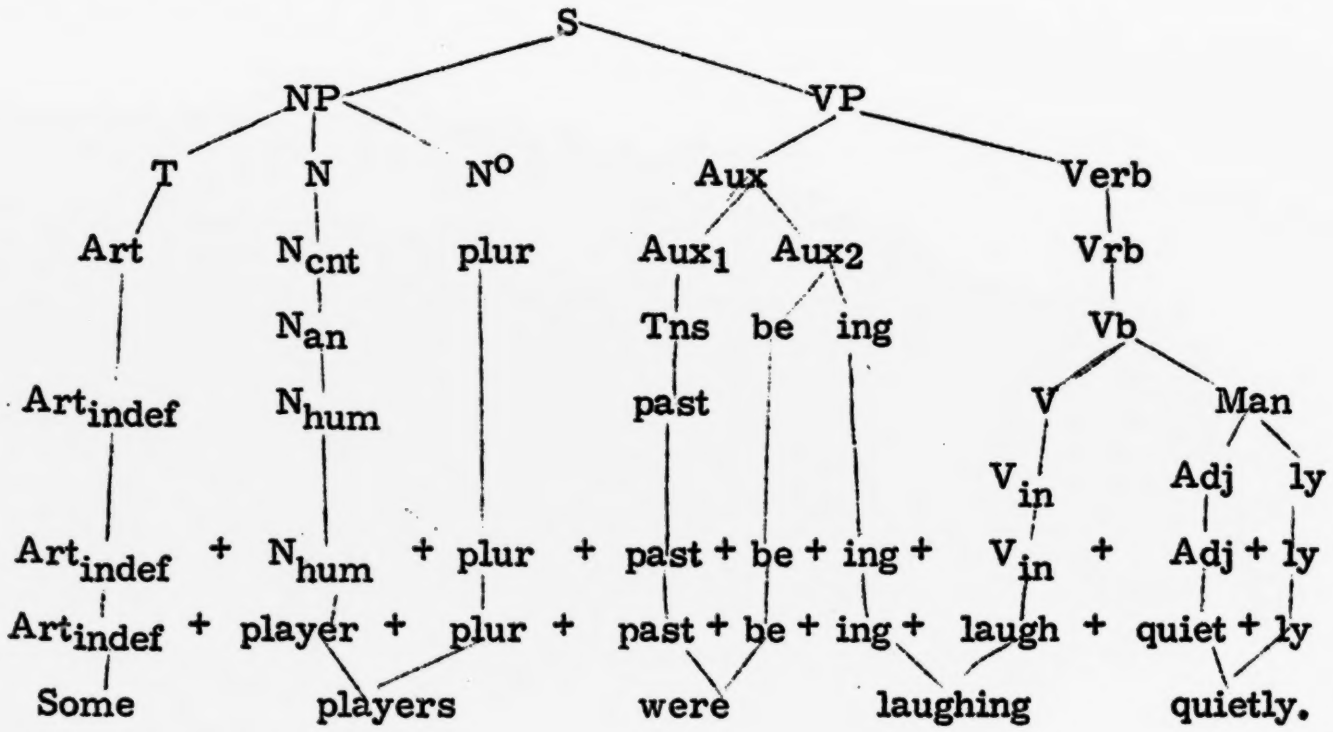
The most important idea for your students to get from this unit is a reinforcement of the principle which has been emphasized over and over in the grammar: that there are general rules which explain in an economical way many complex structures of our language. In this unit we find that the general transformation which accounts for the embedding of relative clauses also explains the presence of what were traditionally called adverbial clauses.

Key to Exercises

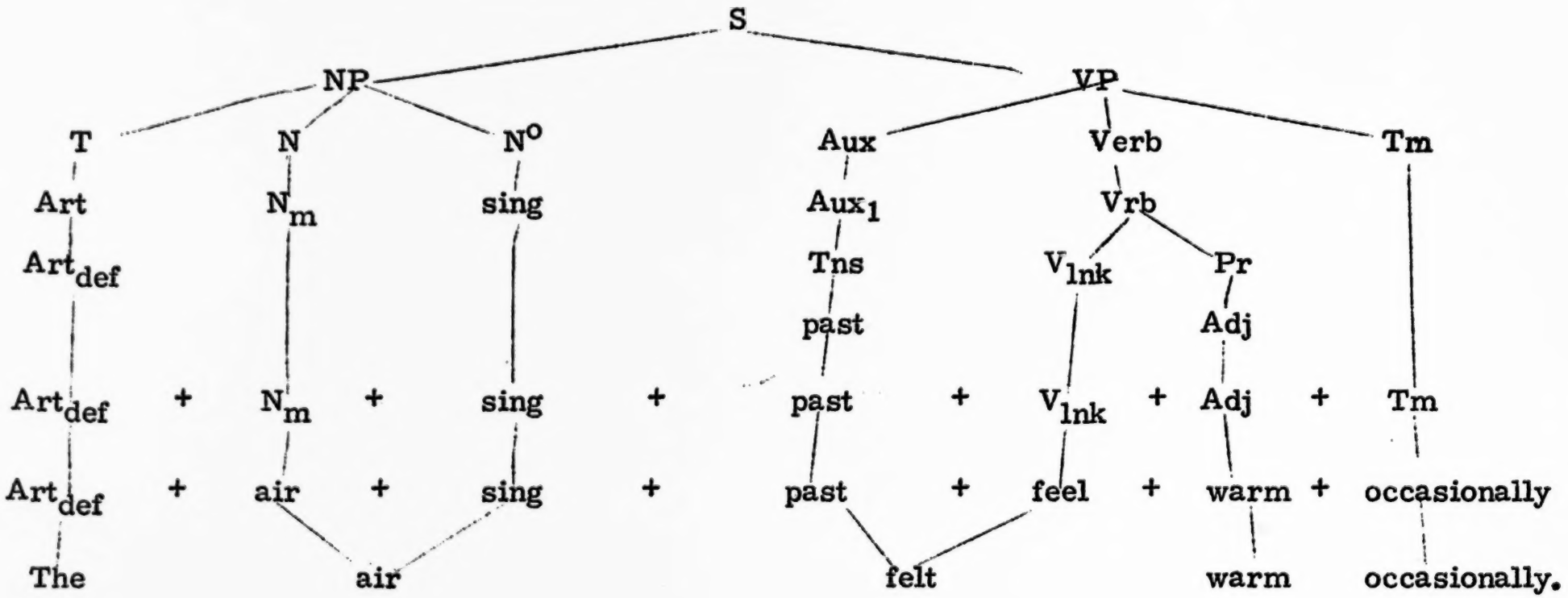
Note: In the key all of the diagrams are worked out in detail. Requiring your students to construct some diagrams in this fashion will serve as a good review of the phrase structure part of the grammar, but you may want to save time in many exercises by having them bring down the NP without breaking it down. Use the exercises in the way that they will be most helpful for your classes.

Exercise 1, p. 4

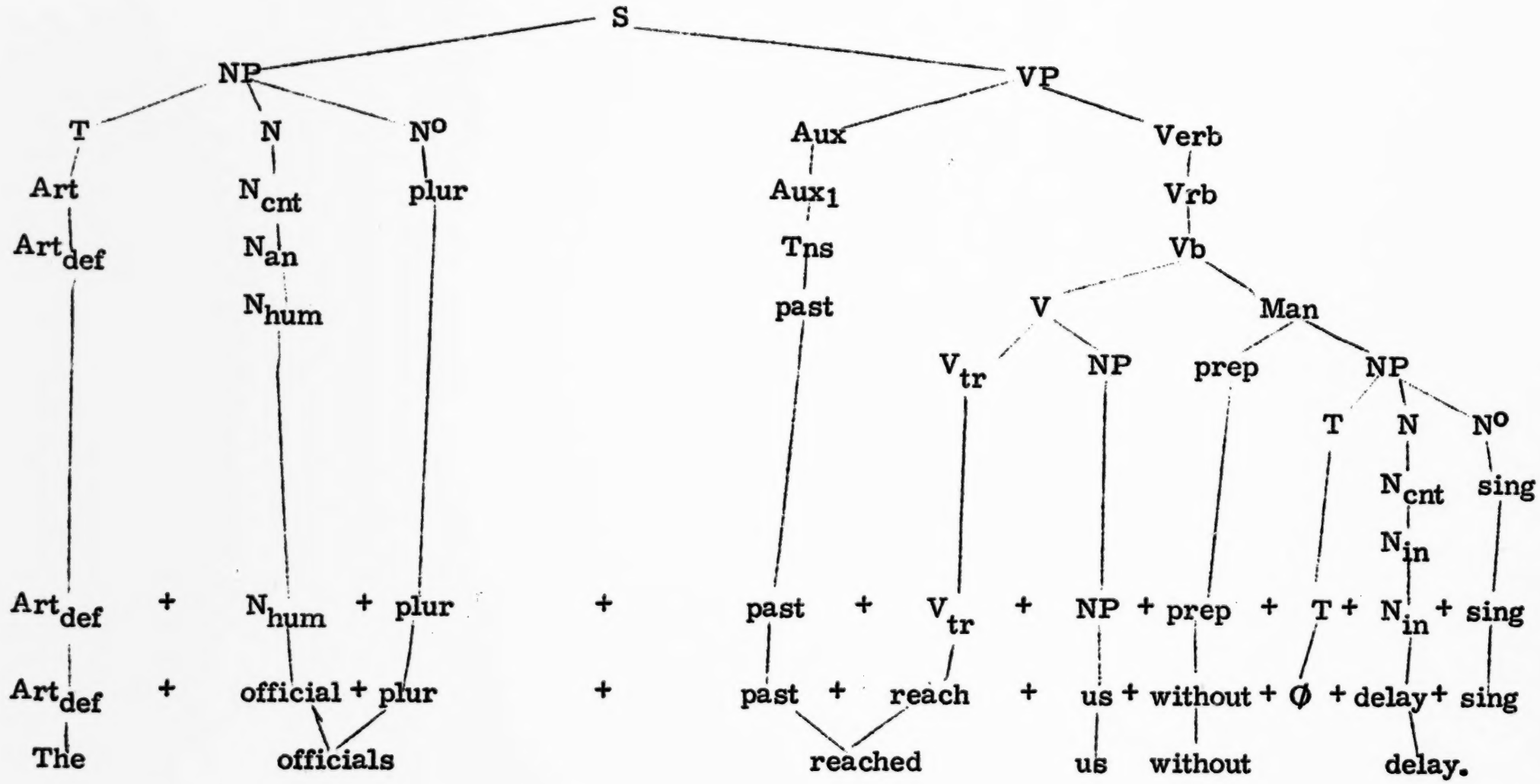
1. Some players were laughing quietly.



2. The air felt warm occasionally.

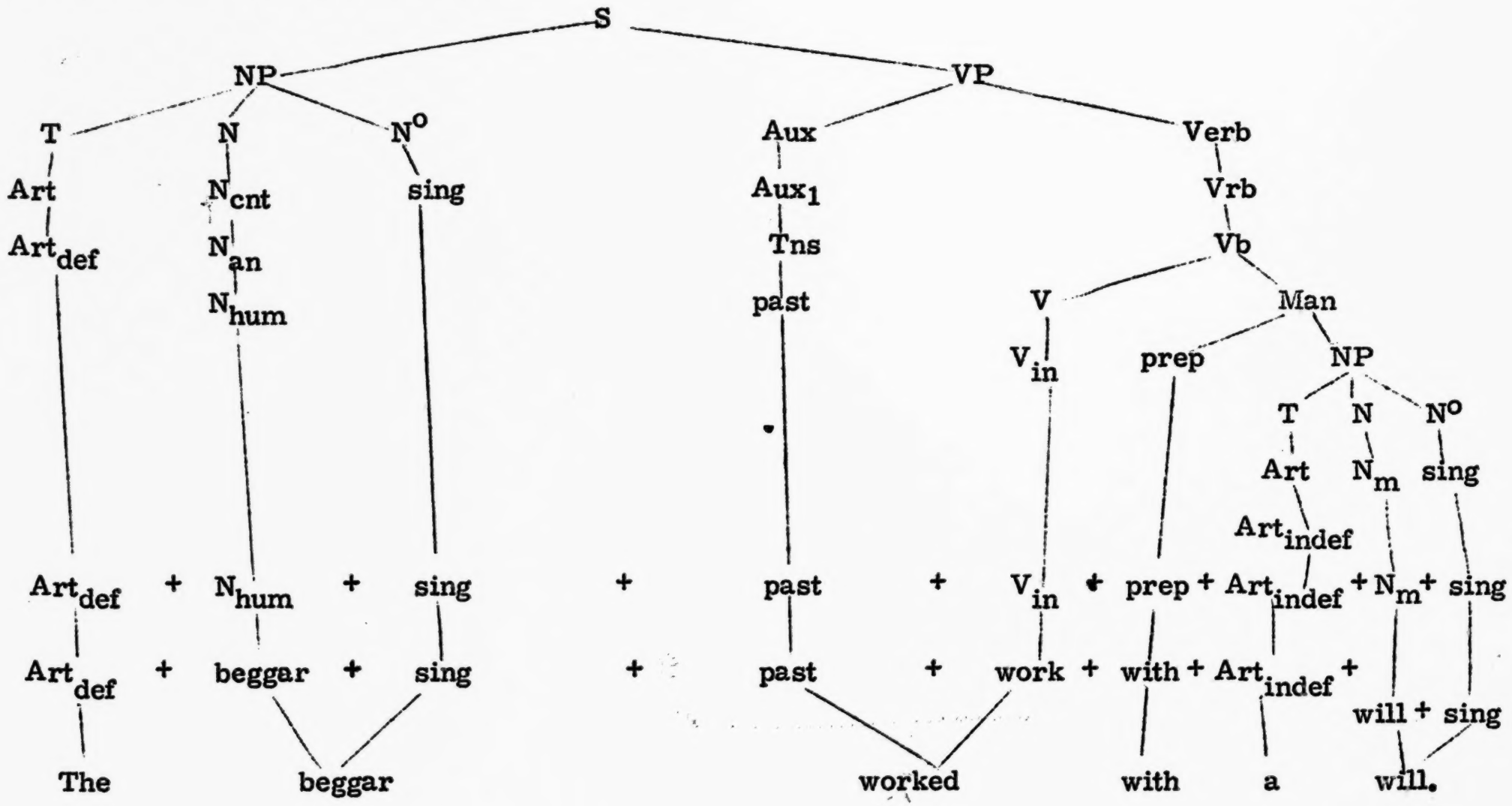


3. The officials reached us* without delay.

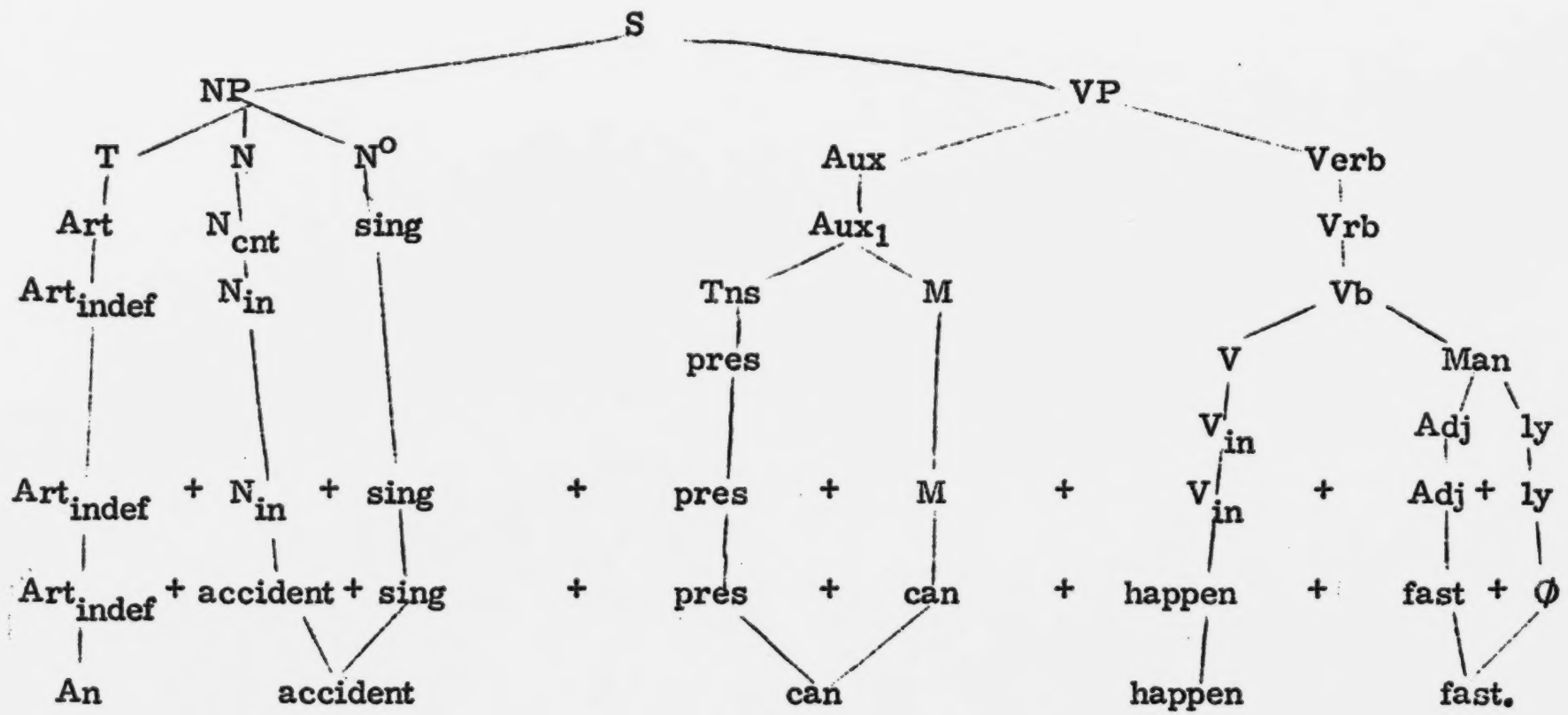


*Note that we do not presently have rules developing NP's which are pronouns.

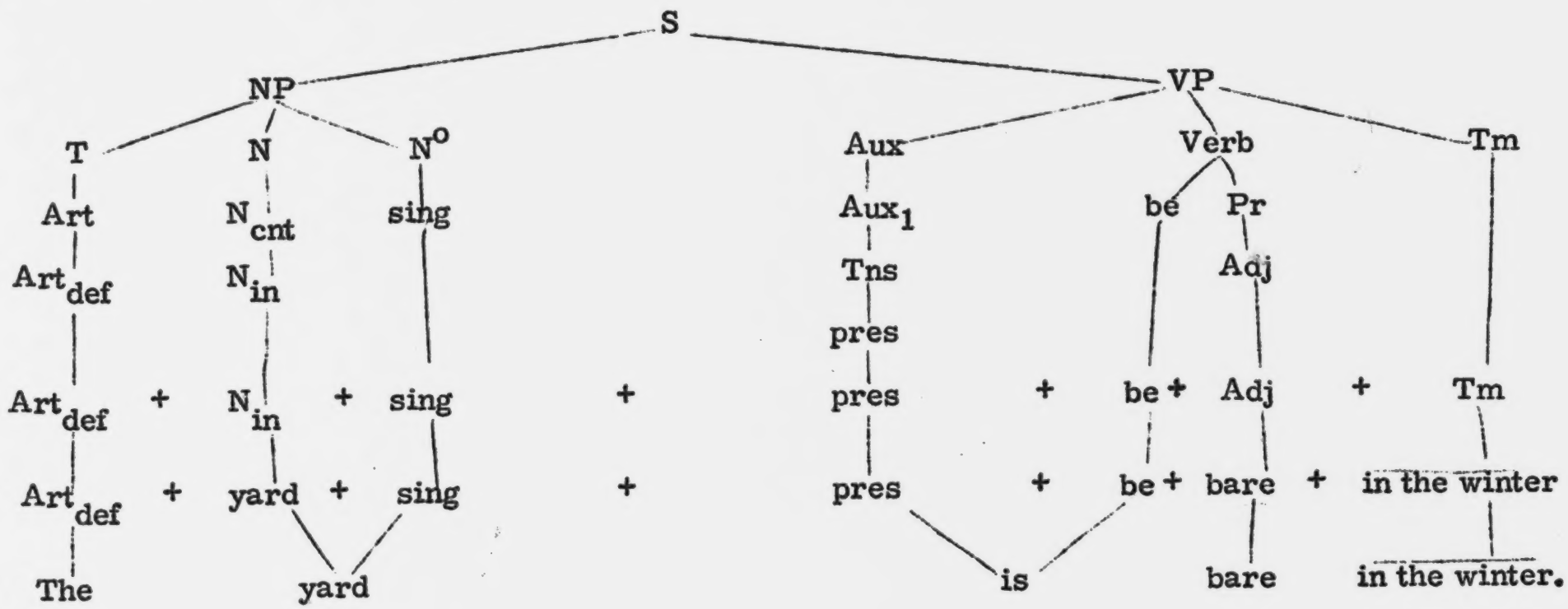
4. The beggar worked with a will.



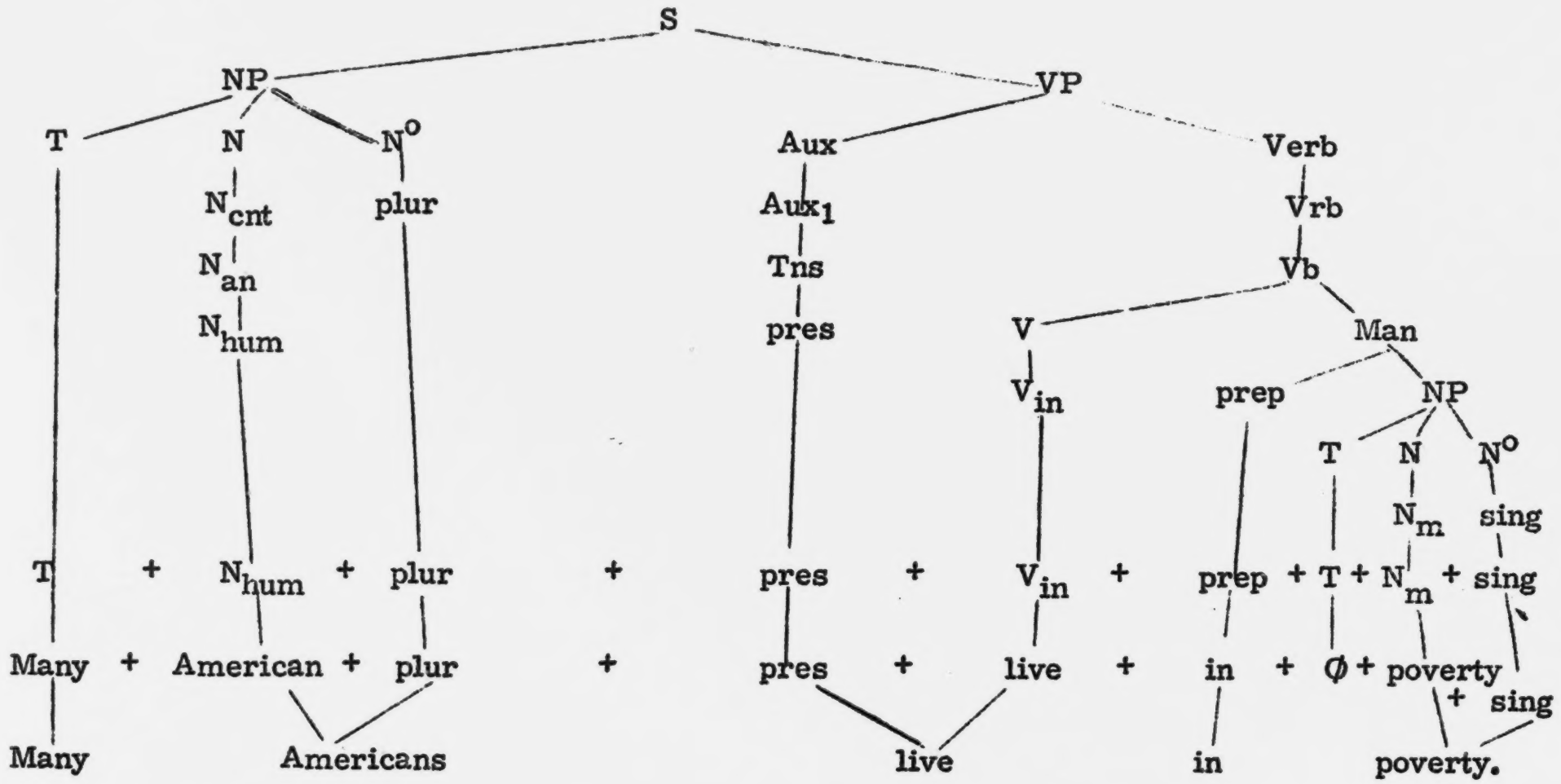
5. An accident can happen fast.



6. The yard is bare in the winter.



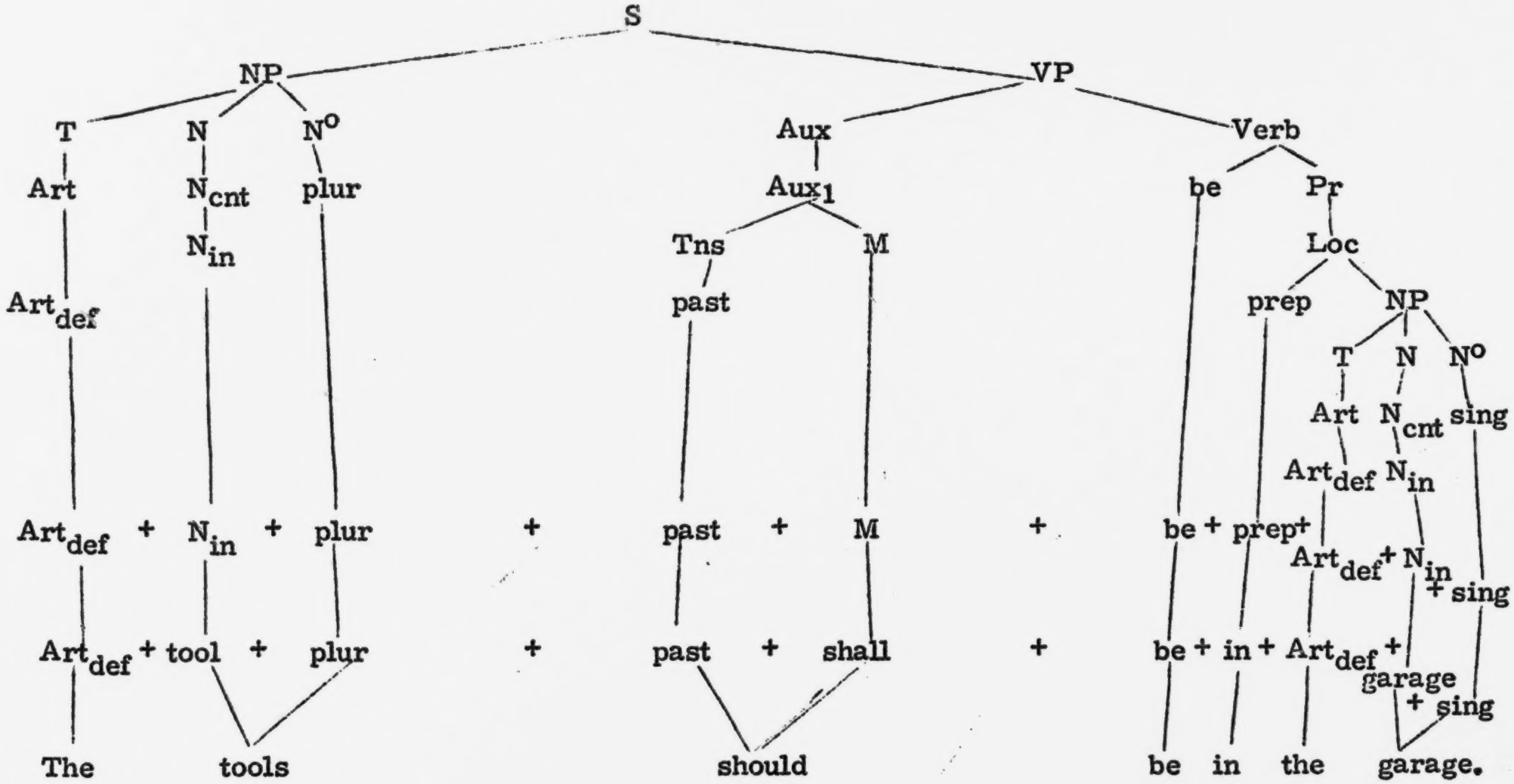
7. Many* Americans live in poverty.



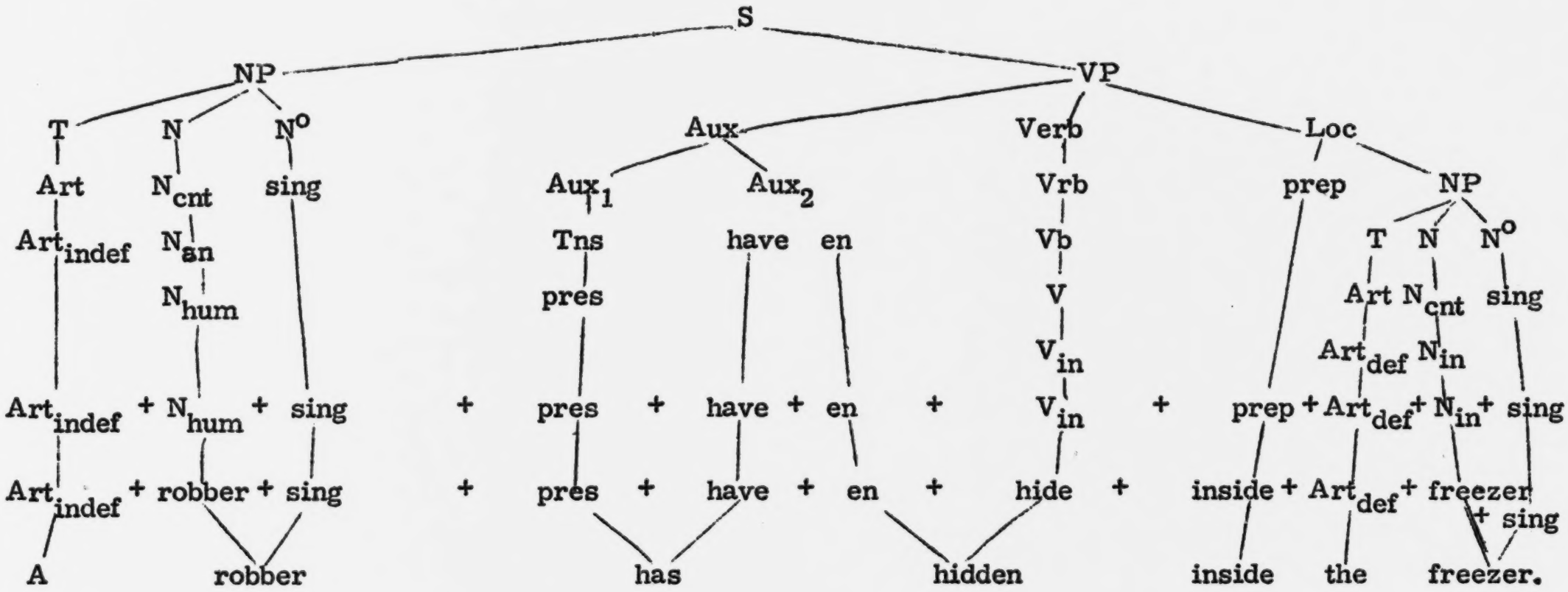
*Note that we do not presently have rules which specify determiners like <u>many</u>.

Exercise 2, p. 5

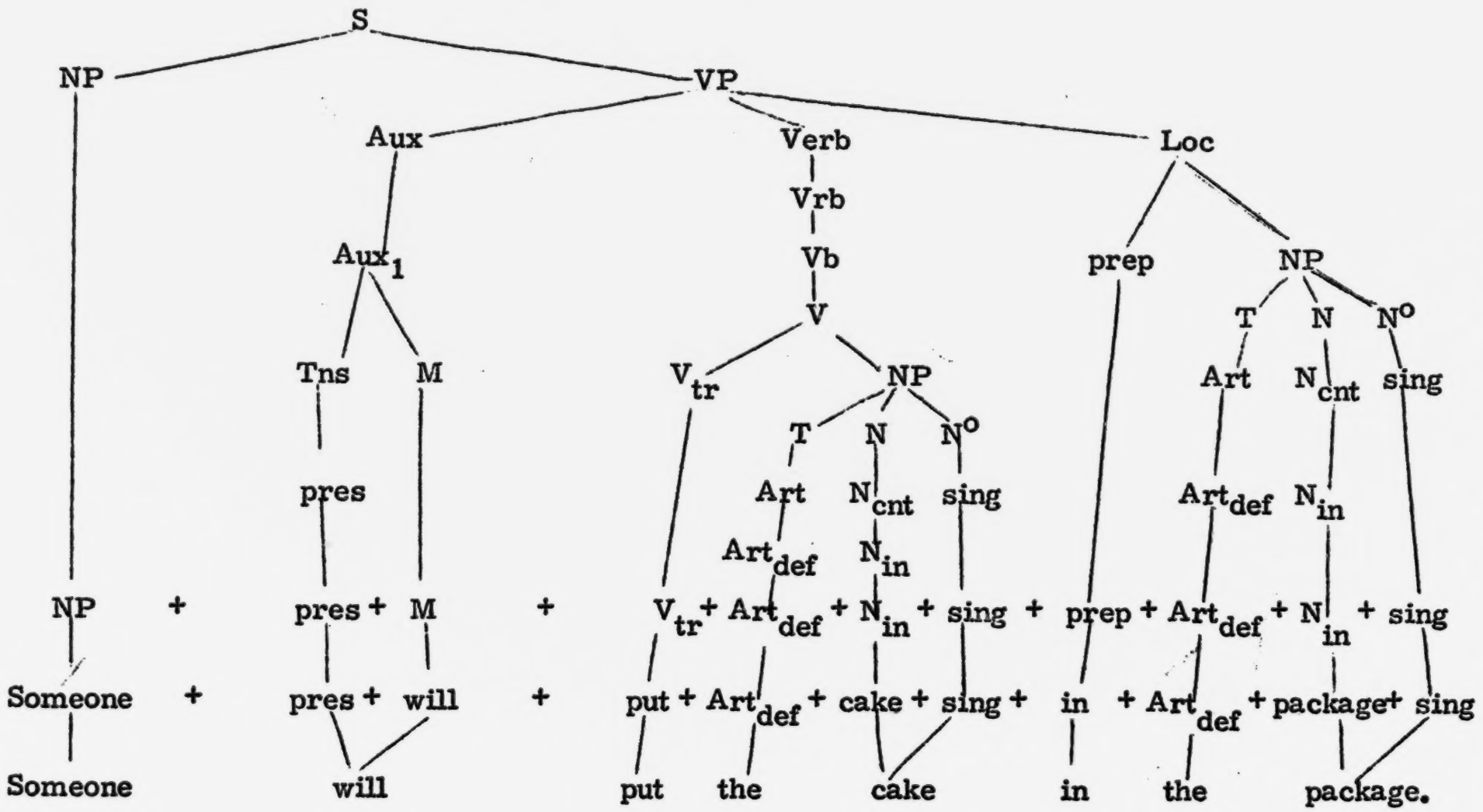
1. The tools should be in the garage.



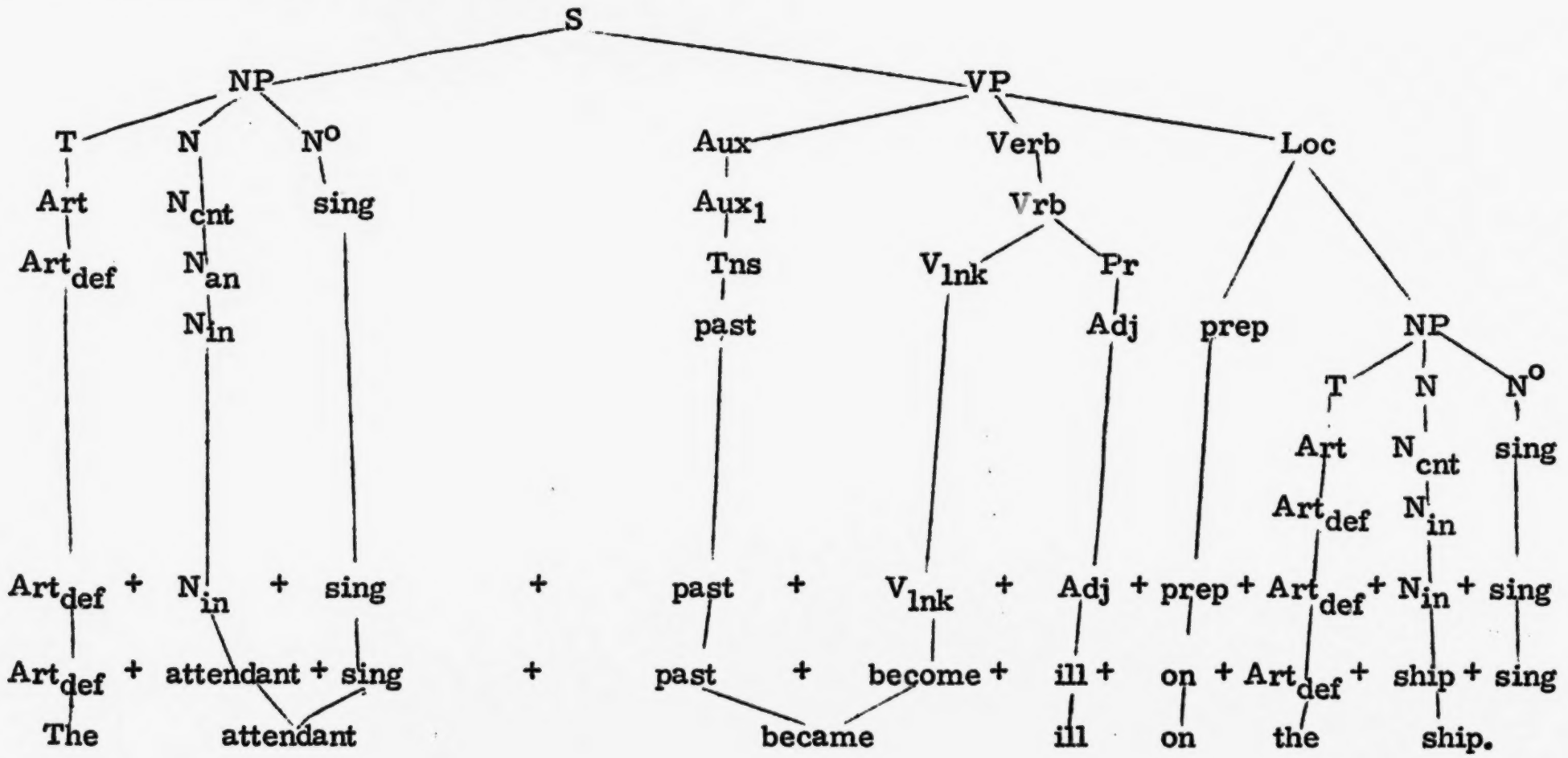
2. A robber has hidden inside the freezer.



3. Someone will put the cake in the package.

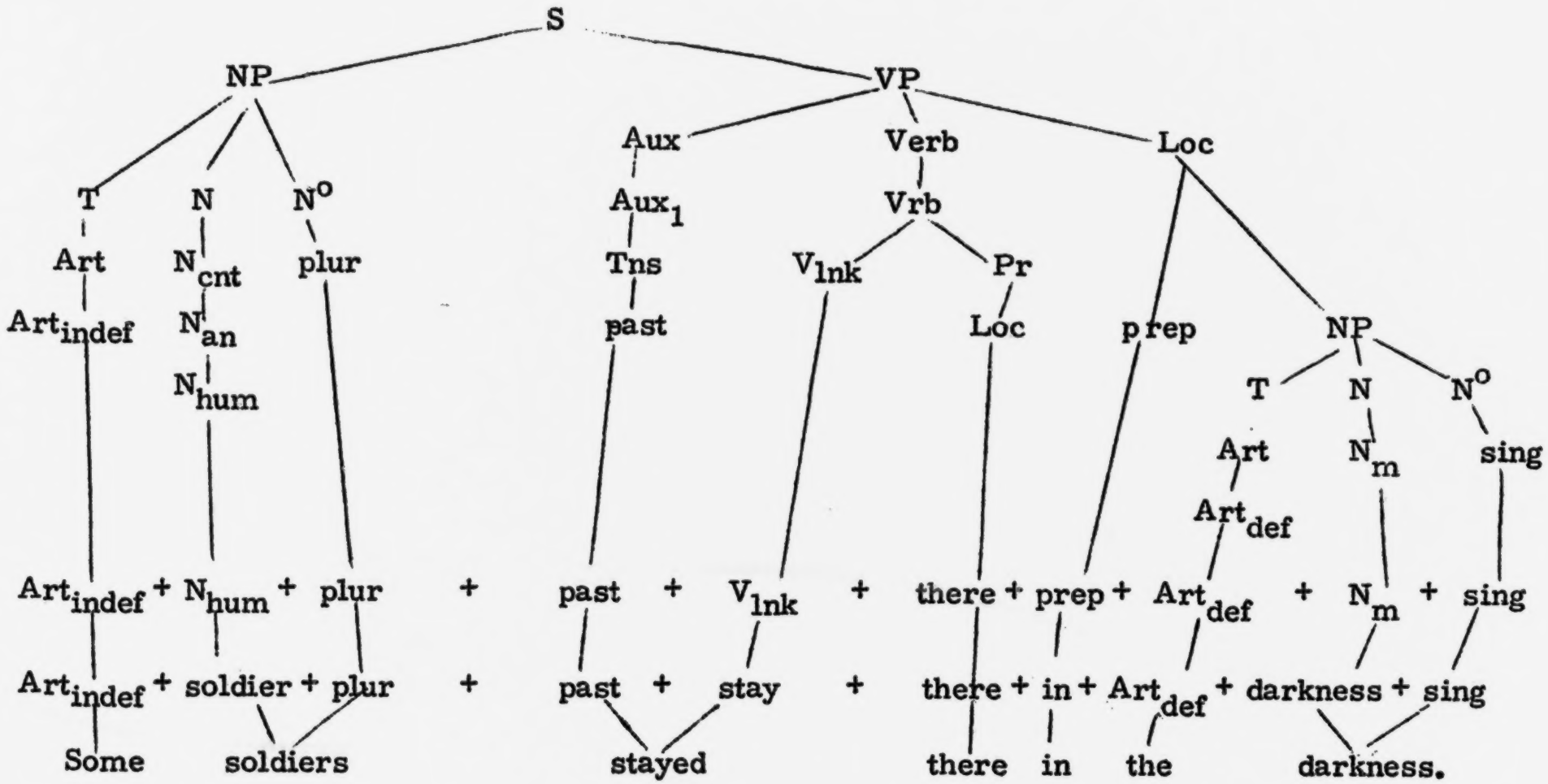


4. The attendant became ill on the ship.*



*Note that ship could also be classified as $N_{non\text{-}human}$.

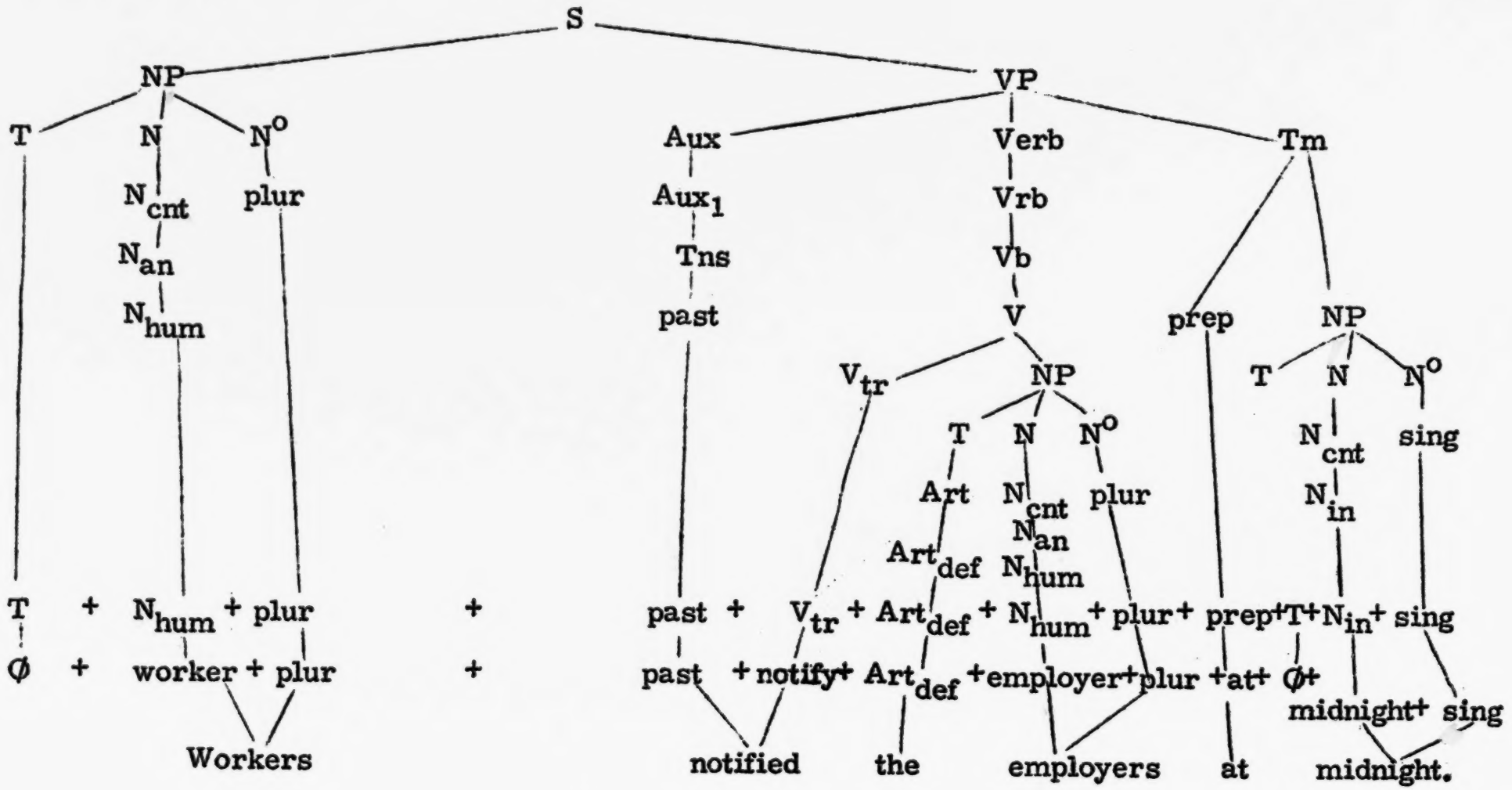
5. Some soldiers stayed there in the darkness.



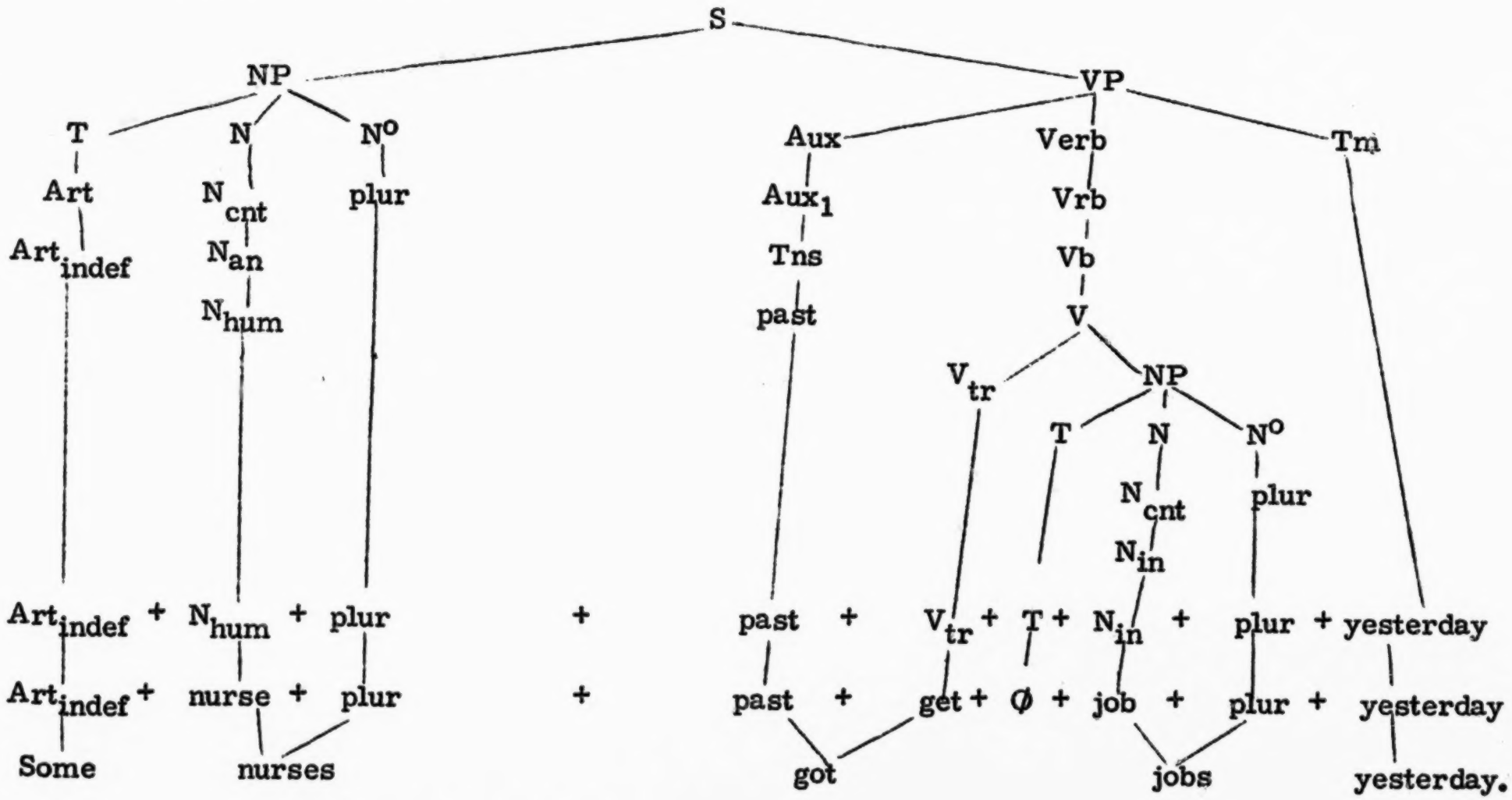
Exercise 3, p. 7

Part A: Answers will vary.

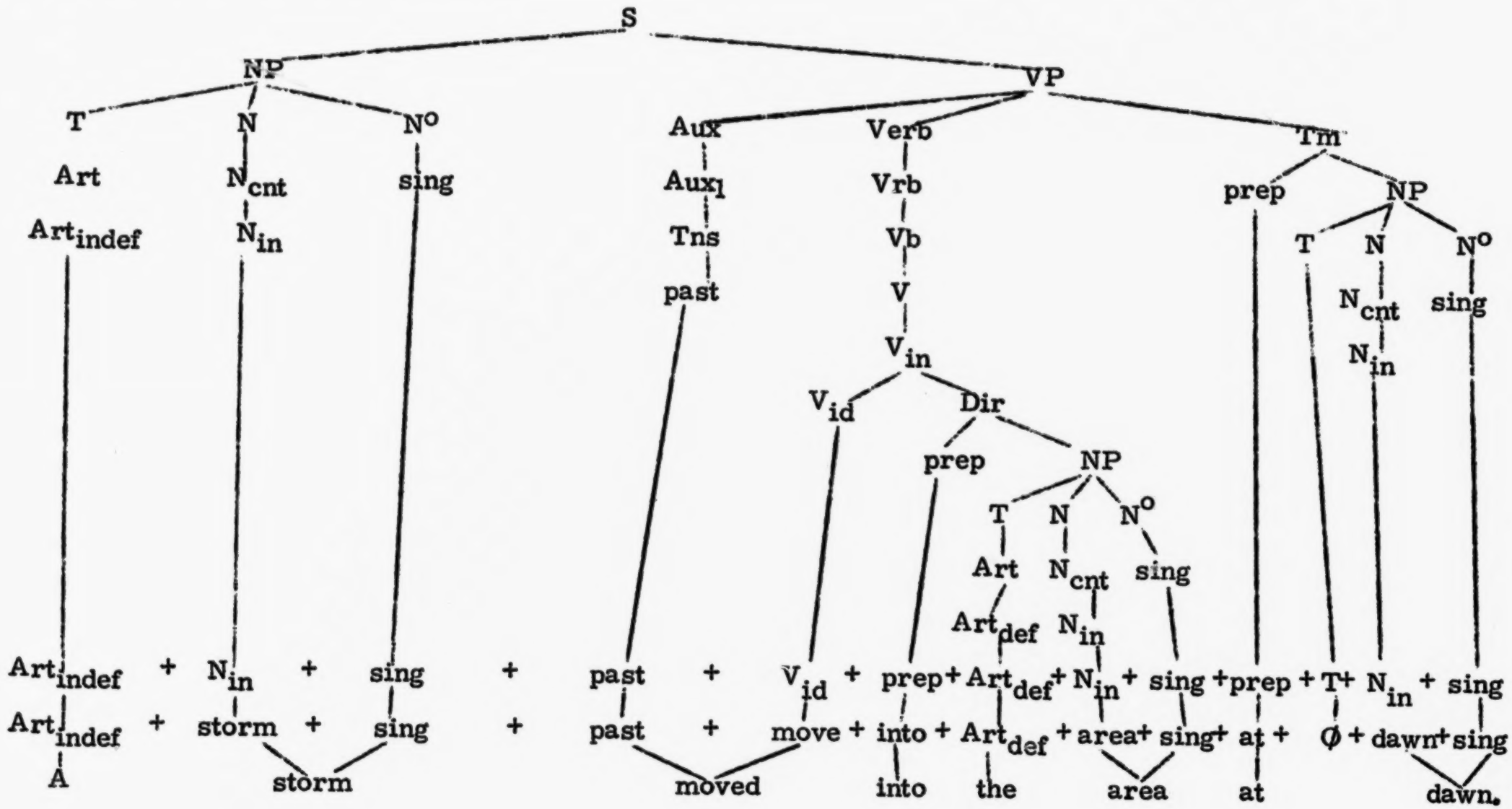
Part B:
1. Workers notified the employers at midnight.



2. Some nurses got jobs yesterday.

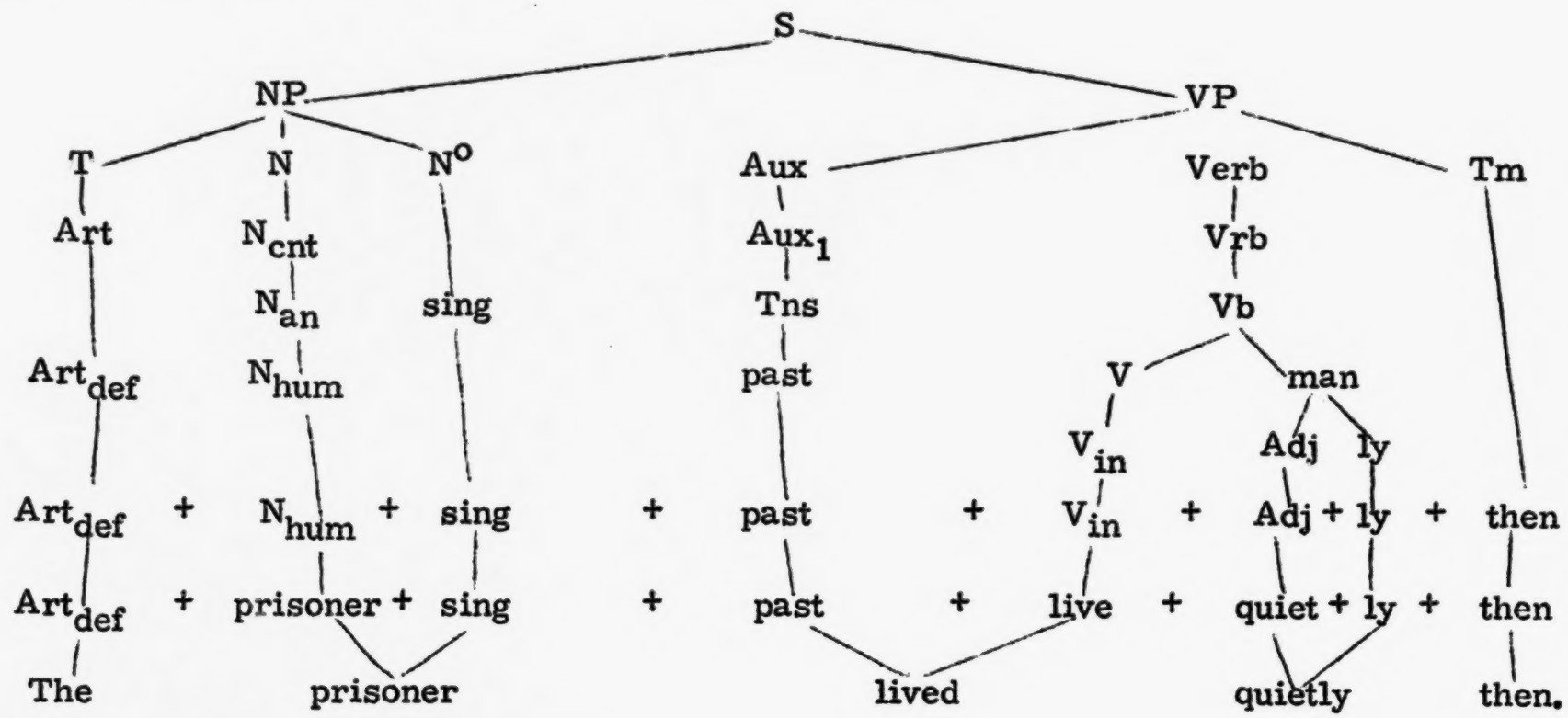


3. A storm moved into the area* at dawn.



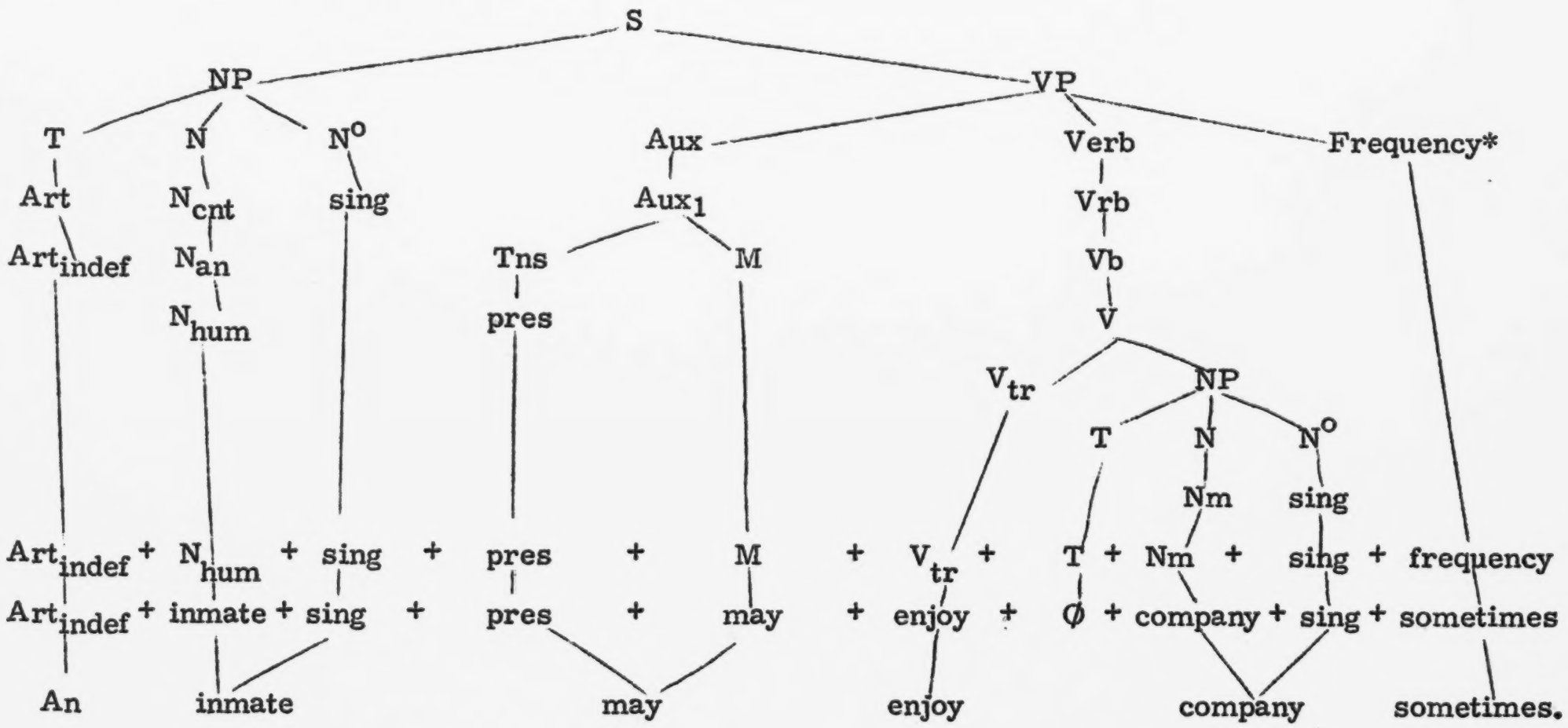
*Area can also be N_{mass}.

4. The prisoner* lived quietly then.



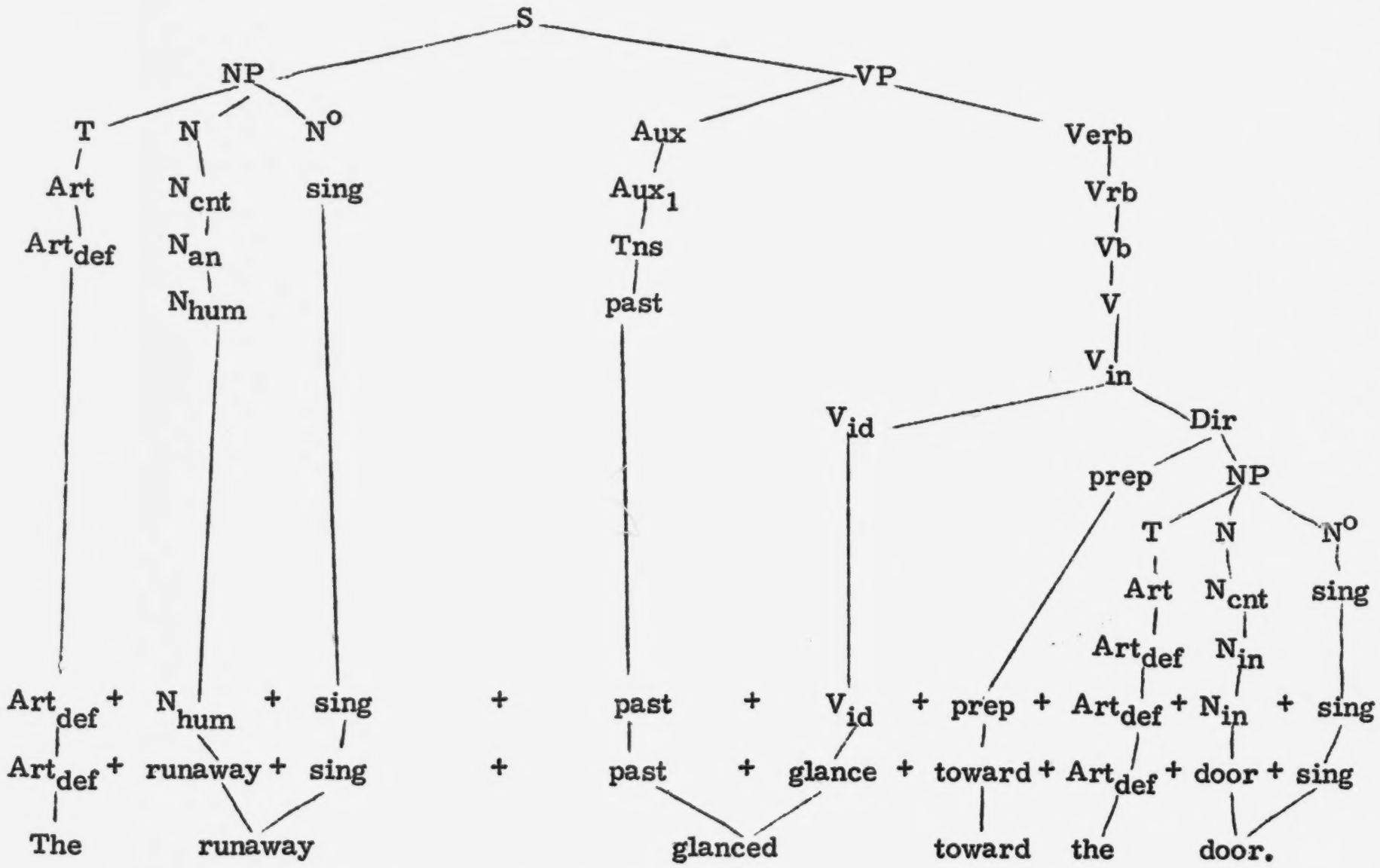
*Prisoner could also be $N_{non\text{-}human}$.

5. An inmate may enjoy company sometimes.



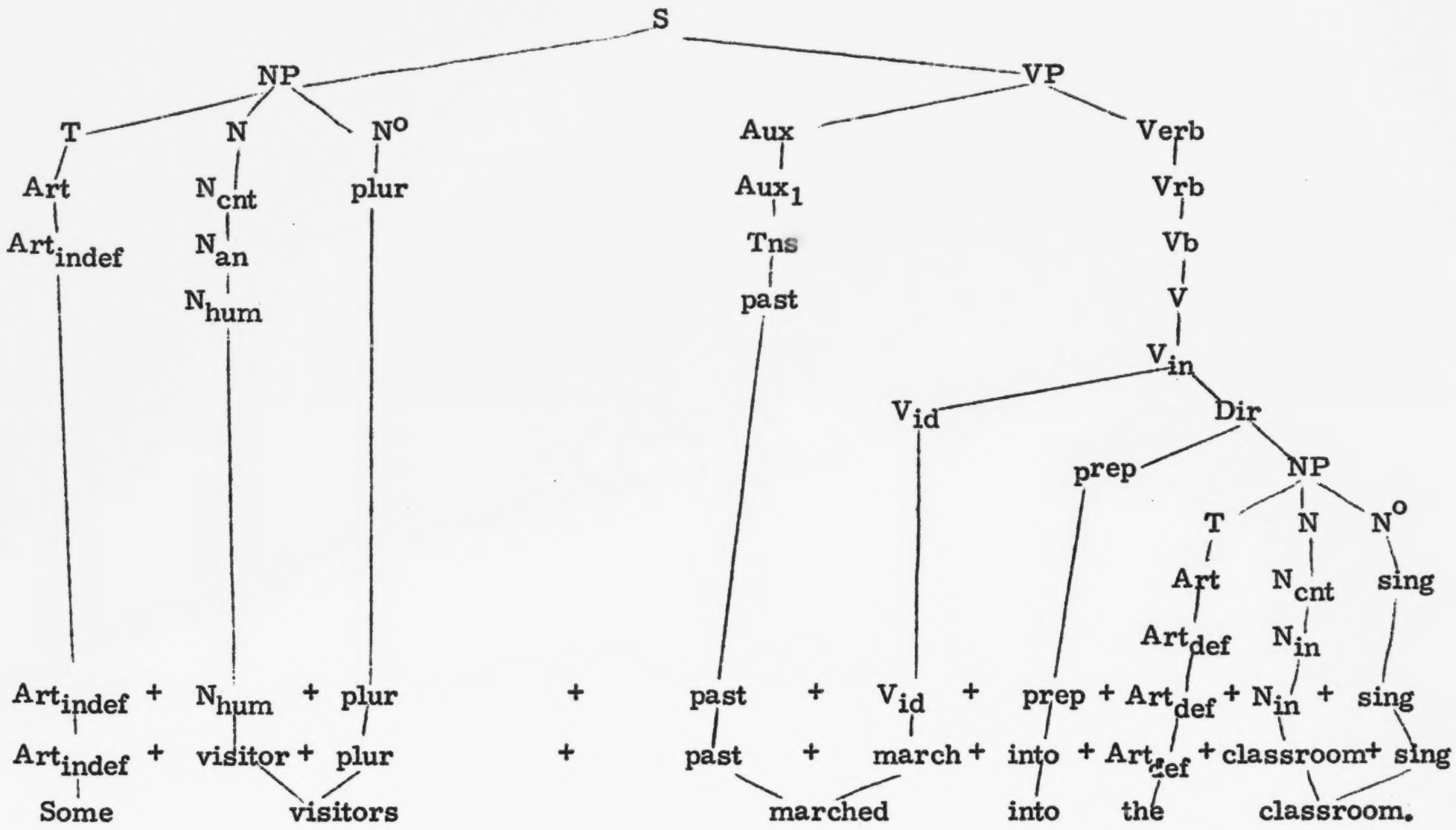
*Note that we do not have a rule accounting for adverbs of frequency.

Exercise 4, p. 9
1. The runaway glanced toward the door*



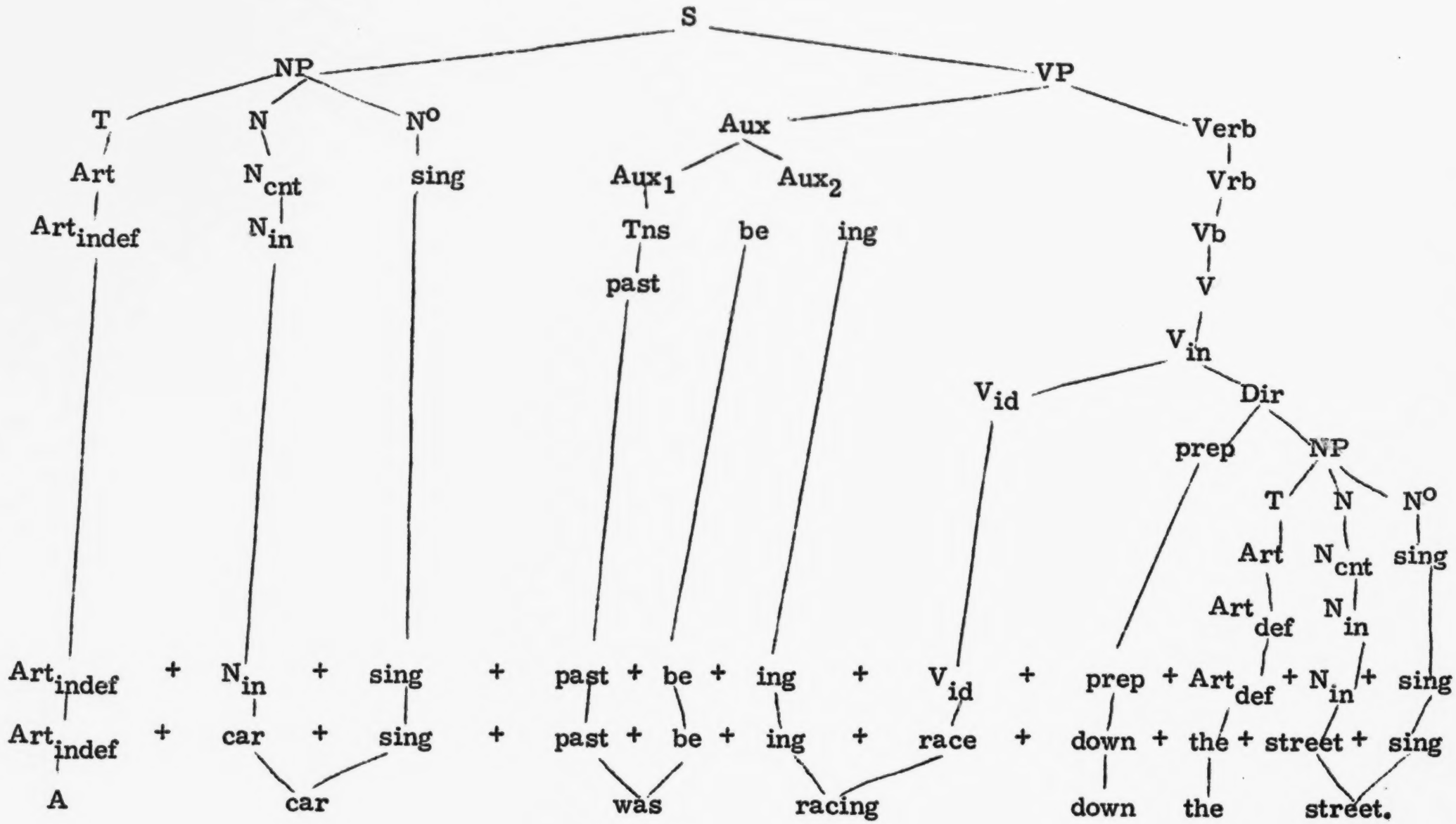
*Glance toward might also be considered a V_{tprep} + prep (a transitive verb which includes a preposition.)

2. Some visitors* marched into the classroom.

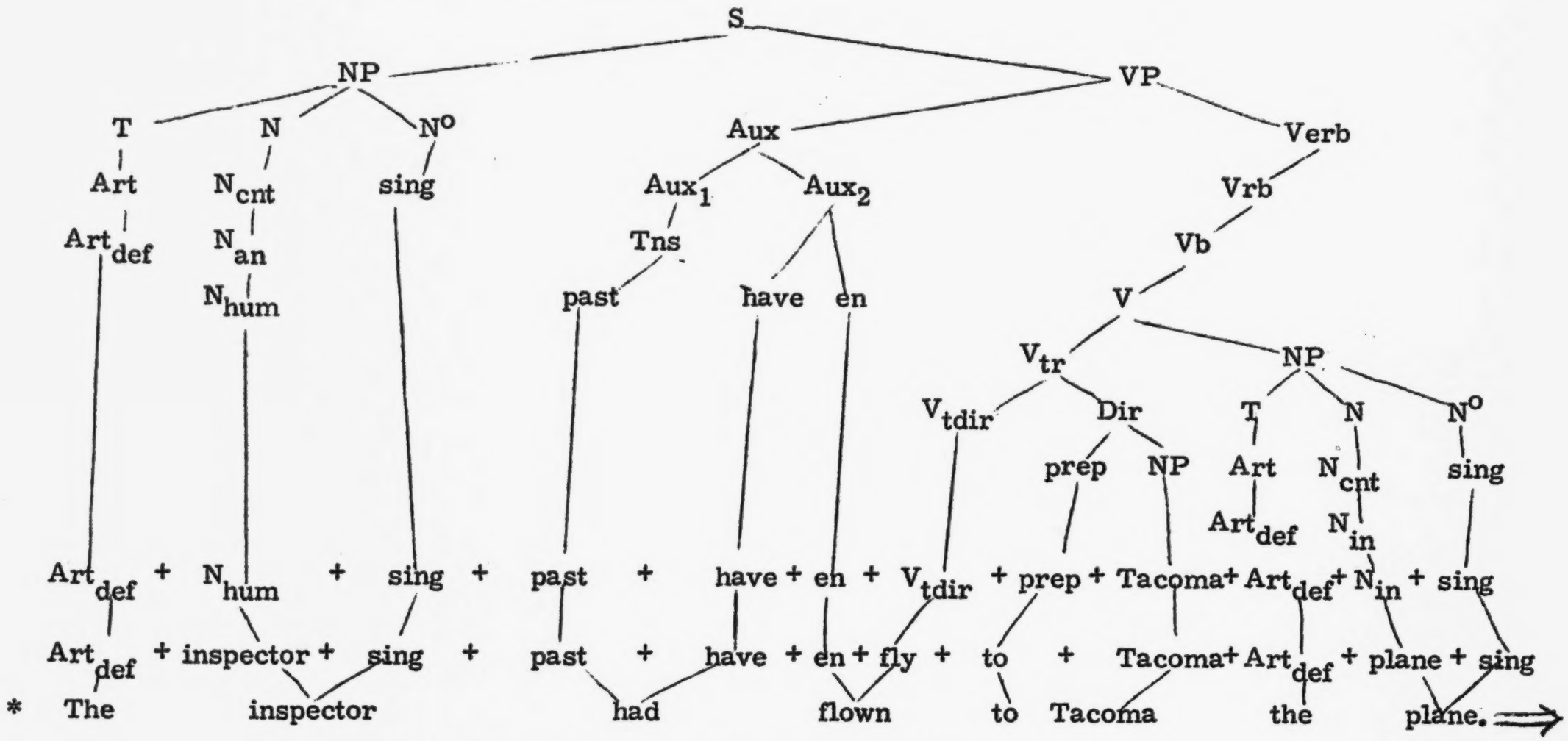


*Visitors could also be $N_{non\text{-}human}$.

3. A car was racing down the street.



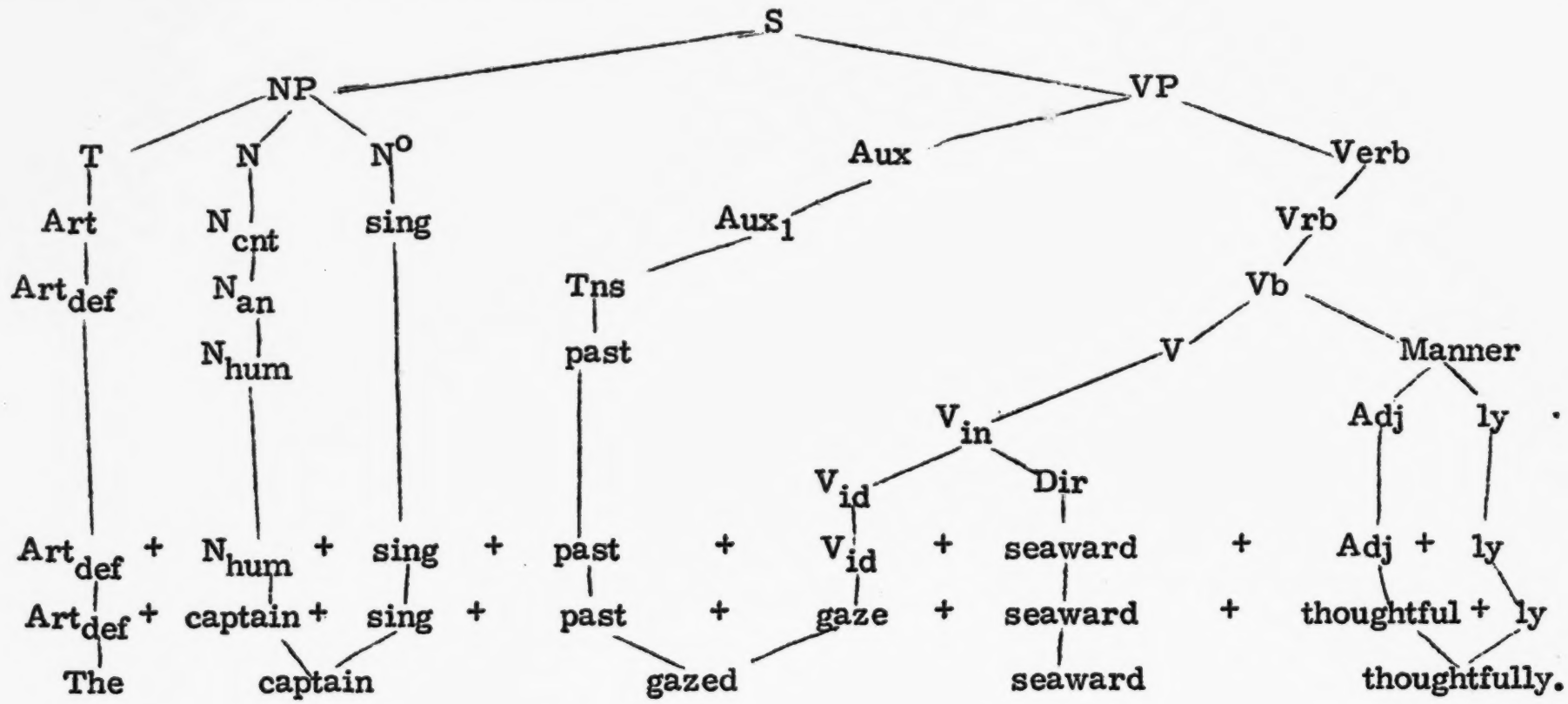
4. The inspector had flown the plane to Tacoma.



The inspector had flown the plane to Tacoma.

*Note that the sentence derived by the phrase structure rules must be transformed in order to be grammatical.

5. The captain gazed seaward thoughtfully.



Exercise 5, p. 10.

Answers will vary.

Exercise 6, p. 16.

Part A:

1. He travels at the time.
   The weather is bad at the time.

2. The visitors came at the time.
   She was busy at the time.

3. I left the tools at the place.
   The view is best at the place.

4. The pirate stood on the place.
   The treasure lay at the place.

5. The fool had gone to the place.
   The danger was at the place.

6. A pupil had protested at the time.
   I made the assignment at the time.

7. Some weeds were growing at the place.
   I had buried it at the place.

8. The workers remained at the place.
   I had left them at the place.

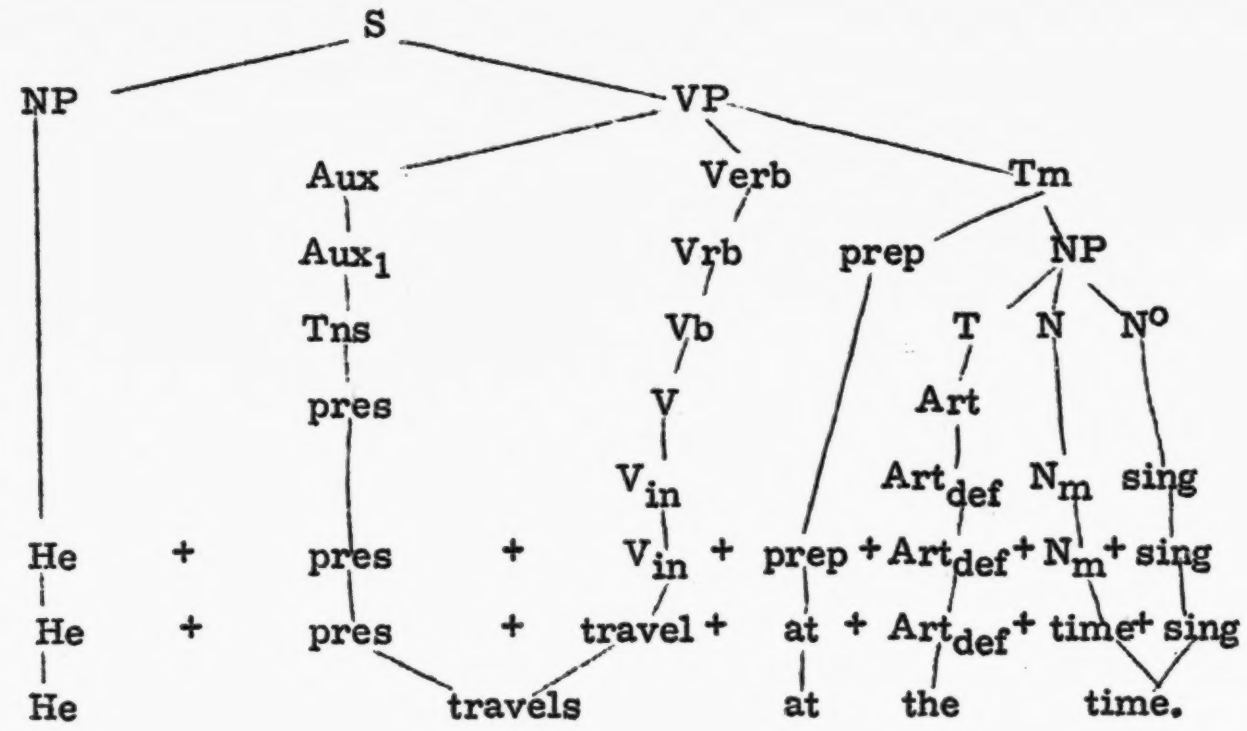
9. The accident occurred at the time.
   I was driving carefully at the time.

10. The boy left yesterday.
    The boy was here.

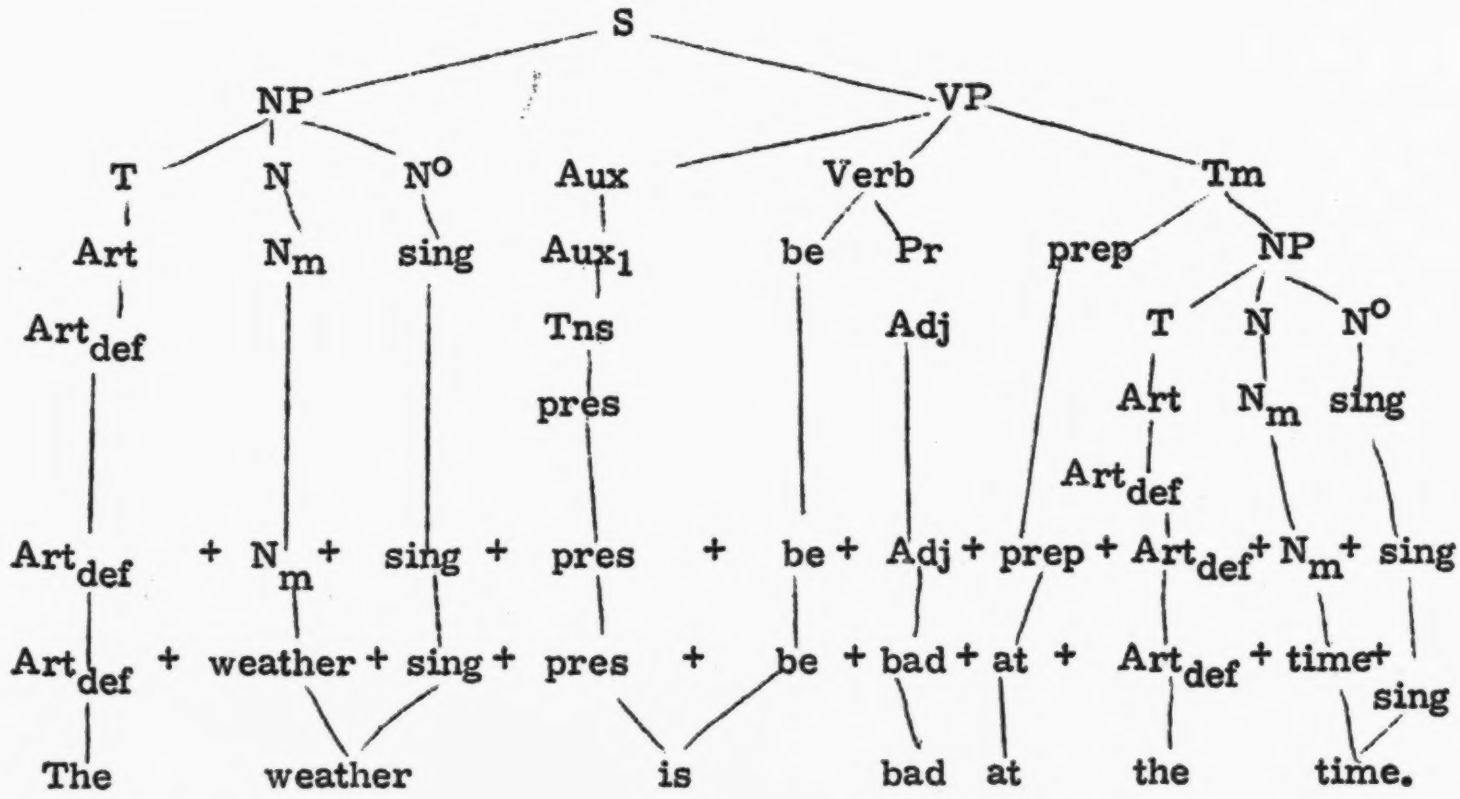
Part B:

The underlying sentences have very simple structure. Each one (except the consumer sentence in No. 10) has a time or place adverbial. The trees for sentence No. 1 follow:

1_a. He travels at the time.



1_b. The weather is bad at the time.



Part C:

1. He travels at the time.
   The weather is bad at the time. } ⇒

   *He travels at the time <u>at</u> <u>wh</u> + <u>the time</u> the weather is bad ⇒

   He travels at the time <u>when</u> the weather is bad. ⇒
   which can become
   He travels when the weather is bad.

2. The visitors came at the time.
   She was busy at the time. } ⇒

   *The visitors came at the time <u>at</u> <u>wh</u> + <u>the time</u> she was busy ⇒

   The visitors came at the time <u>when</u> she was busy. ⇒
   which can become
   The visitors came when she was busy.

3. I left the tools at the place.
   The view is best at the place. } ⇒

   *I left the tools at the place <u>at</u> <u>wh</u> + <u>the place</u> the view is best ⇒

   I left the tools at the place <u>where</u> the view is best. ⇒
   which can become
   I left the tools where the view is best.

4. The pirate stood on the place.
   The treasure lay at the place. } ⇒

   *The pirate stood on the place <u>at</u> + <u>wh</u> + <u>the place</u> the treasure lay ⇒

   The pirate stood on the place <u>at</u> <u>which</u> the treasure lay ⇒
   which can become
   The pirate stood where the treasure lay.

5. The fool had gone to the place.
   The danger was at the place. } ⇒

   *The fool had gone to the place <u>at</u> + <u>wh</u> + <u>the place</u> the danger was ⇒

   The fool had gone to the place <u>where</u> the danger was ⇒
   which can become
   The fool had gone where the danger was.

6. A pupil had protested at the time .
   I made the assignment at the time. } ⇒

   *A pupil had protested at the time <u>at</u> + <u>wh</u> + <u>the time</u> I made the assignment ⇒

   A pupil had protested at the time <u>when</u> I made the assignment ⇒

   A pupil had protested when I made the assignment.

7. Some weeds were growing at the place.
   I had buried it at the place. } ⇒

   *Some weeds were growing at the place <u>at</u> + <u>wh</u> + <u>the place</u> I had buried it ⇒

   Some weeds were growing at the place <u>where</u> I had buried it ⇒

   Some weeds were growing where I had buried it.

8. The workers remained at the place.
   I had left them at the place. } ⇒

   *The workers remained at the place <u>at wh</u> + <u>the place</u> I had left them ⇒

   The workers remained at the place <u>where</u> I had left them ⇒

   The workers remained where I had left them.

9. The accident occurred at the time.
   I was driving carefully at the time. } ⇒

   *The accident occurred at the time <u>at wh</u> + <u>the time</u> I was driving carefully ⇒

   The accident occurred at the time when I was driving carefully ⇒

   The accident occurred at the time <u>when</u> I was driving carefully ⇒

   The accident occurred when I was driving carefully.

10. The boy left yesterday.
    The boy was here. } ⇒

    *The boy <u>wh</u> + <u>the boy</u> was here left yesterday ⇒

    The boy <u>who</u> was here left yesterday.

Exercise 7, p. 18

Answers will vary. The kinds of sentences that students will suggest need not be explained completely. The intent of the exercise is to get them to examine a very interesting feature of language--ambiguity.

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OREGON CURRICULUM STUDY CENTER

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ADVERBIALS

Language Curriculum V

Student Version

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ADVERBIALS

Language Curriculum V

Student Version

I. Introduction

Can you remember the exact place in our study of grammar where the word adverbial was first introduced? In your study of phrase structure rules, you discovered that one of the distinguishing features of a mid verb (V_{mid}) is that it does not usually take a manner adverbial (Man) but that manner adverbials can occur with transitive verbs (V_{tr}) and intransitive verbs (V_{in}). Manner adverbials are often defined as words (or groups of words) that are related to the question "How?" meaning "In what manner?" Pick out any manner adverbials you can identify in the following sentences:

(1) The boys looked over the equipment gleefully.
(2) Some packages arrived quickly.
(3) The doctor visited him frequently.
(4) He finished the work reluctantly.
(5) His team hits hard.

Which sentence does not contain a manner adverbial? What question is the word frequently related to? Certainly it is not "How did the doctor visit him? or "In what manner did the doctor visit him?" Therefore, sentence (3) does not contain a manner adverbial; the other sentences do, of course.

The phrase structure rules analyze the manner adverbial still further. Many manner adverbials for instance can be described as consisting of an adjective + ly. An adjective, of course, is a word that can occur immediately after the verbs Be or V_{lnk} and can usually be placed in front of the noun in the subject NP. For example, "The boy is quick" can become "The quick boy is . . . ." In the sentence "The boy answered the question quickly," the manner adverbial is quickly, which in turn can be analyzed as the adjective quick + ly. Do all manner adverbials need to have the ly? Look again at sentence (5). What is the manner adverbial? The word hard is related to the question "In what manner?" but it does not end in ly. Do you know of other words like this one? How about well and fast? Of course, not all adjectives can join with ly to form manner adverbials: tightly and neatly but not *yellowly or *tallly. Can the adjective lovely take another ly?

You have undoubtedly encountered still other adverbials that are related to the question "In what manner?" but do not consist of adjective + ly. Look at the following sentences:

(6) The delegates traveled in comfort.
(7) The workmen lifted it with difficulty.
(8) A caliph lives in luxury.
(9) The rescuers probed with caution.
(10) The committee resigned without a complaint.

In each of the sentences above, the underlined group of words is related to the question "In what manner?" It seems, then, that our rules need further revision to account for manner adverbials other than the type described as adjective + ly.

It is not just the rules covering the manner adverbial that need further attention. What other adverbials have you encountered in your study of grammar? Try to name them and give examples of each of them. Which adverbials are present in the following sentences?

(11) The policeman looked in the chest.
(12) Someone had looked there.
(13) A necklace had disappeared yesterday.
(14) The butler called the police before noon.
(15) A thief sneaked toward the house.
(16) The boys had done it for fun.

Each of the above sentences contains an adverbial (either a single word or a group of words): Loc (adverbial of place) in (11) and (12), Tm (adverbial of time) in (13) and (14), Dir (adverbial of direction) in (15), and Reason (adverbial of reason) in (16). But nowhere in our phrase structure rules do we have rules specifying exactly what Loc, Tm, Dir, or Reason can be. All you have been given are tests to identify these structures and lists of words and phrases that can occur as Loc, Tm, Dir, or Reason. What are the tests for these adverbials?

Loc is related to the question "Where?" or "At what place?"
Tm is related to the question "When?" or "At what time?"
Dir is related to the question "To what place?"
Reason is related to the question "For what reason?"

In this unit we will add some phrase structure rules which will expand each of these adverbials. You will also learn how entire sentences can become embedded in adverbials by means of a transformation rule that you already know. Finally, you will consider the problem of the relative position of adverbials when several occur together in the same sentence.

II. Expansion of the Phrase Structure Rules

A. The manner adverbial

Since we already have a phrase structure rule dealing specifically with the manner adverbial (Man), let us begin with it.

Rule (12) Man ⟶ Adj + ly

Look again at sentences (6) -- (10) in the introduction. Each one contains an adverbial which converts to the question "In what manner?" What are the parts that make up this kind of manner adverbial? Examine them more closely: in comfort, with difficulty, in luxury, with caution, and without a complaint. What is the second element in each one? It is, of course, an

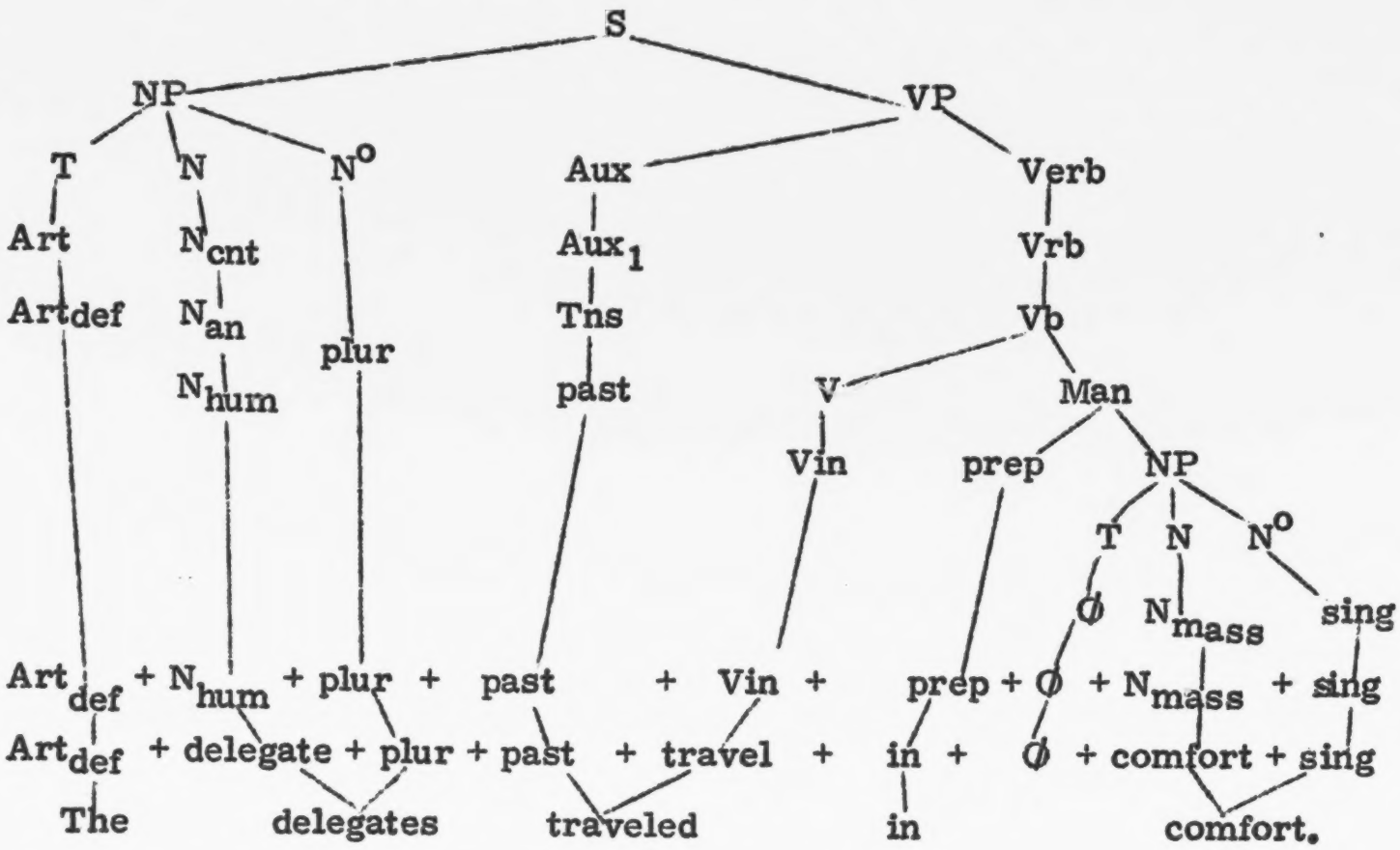
NP. One of these has a determiner (a), whereas the others have the empty set of determiners (∅). The first word in each group is called a preposition. You have encountered prepositions in previous units (e.g., indirect object, Verb + preposition, etc.), but you have never before specified the prepositions that introduce adverbials. What are the prepositions found in sentences (6)--(10)? Can you think of other prepositions that introduce manner adverbials?

Our new rule must account not only for Adj + ly but also for this other possible rewrite of Man. What symbol do we use to indicate that a structure can be rewritten as one of two or more things? Let us revise the rule in this way:

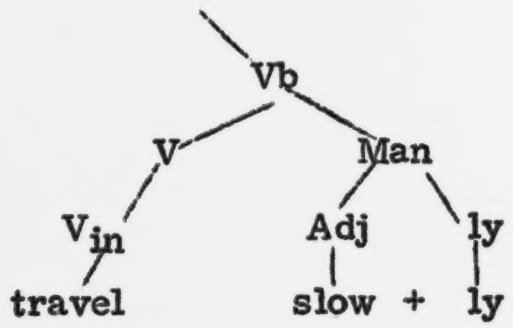
$$\text{Man} \rightarrow \left\{ \begin{array}{l} \text{Adj} + \text{ly} \\ \text{prep} + \text{NP} \end{array} \right\}$$

Can you think of other structures besides these two that can function as manner adverbials? If not, this rule is probably complete and needs no further revision at this time.

How would you construct a branching diagram for sentence (6) "The delegates traveled in comfort"? In what way does the addition to rule (12) affect the diagram?



Notice that we have rewritten the manner adverbial as prep + NP. This additional NP must in turn be expanded by the same rules that are used to expand any NP (e.g. the delegates). How would Man be rewritten if the sentence was "The delegates traveled slowly"?



Exercise 1

Construct branching diagrams for only those sentences which contain manner adverbials. If a sentence contains some other adverbial than Man, simply label it as Loc, Tm, Dir, or Reason.

1. Some players were laughing quietly.
2. The air felt warm occasionally.
3. The officials reached us without delay.
4. The beggar worked with a will.
5. An accident can happen fast.
6. The yard is bare in the winter.
7. Many Americans live in poverty.

B. The place adverbial

Where in the English sentence does the adverb of place (Loc) occur? In the phrase structure rules you learned that adverbials of place or location may occur as predicates (Pr) after the verb Be or after a linking verb (V_{lnk}). For example, both of these sentences are grammatical:

(1) He is there.
(2) He remained there.

In such cases the Loc is essential. However, adverbials of place (Loc) can also occur after all classes of verbs, even those that already have a place adverbial as a predicate. Are the following sentences grammatical?

(3) The weapon is there in the box.
(4) He remained there in the shade.
(5) The doctor had a pain in his head.
(6) Some tramps made a camp in the meadow.
(7) A ribbon lay on the floor.

Each of these sentences contains a place adverbial at the end of the VP. Are they optional or obligatory? To account for such adverbials Loc is included as an optional element after the verb in the rule which breaks down VP:

$$VP \longrightarrow Aux + Verb\ (Loc)$$

There is no rule, however, that specifies exactly what Loc can be. Look at sentences (1)--(7) again. What kinds of adverbs of location do you recognize? There are single words like there and phrases such as in the box and on the floor. Can you think of other items that can occur as adverbs of

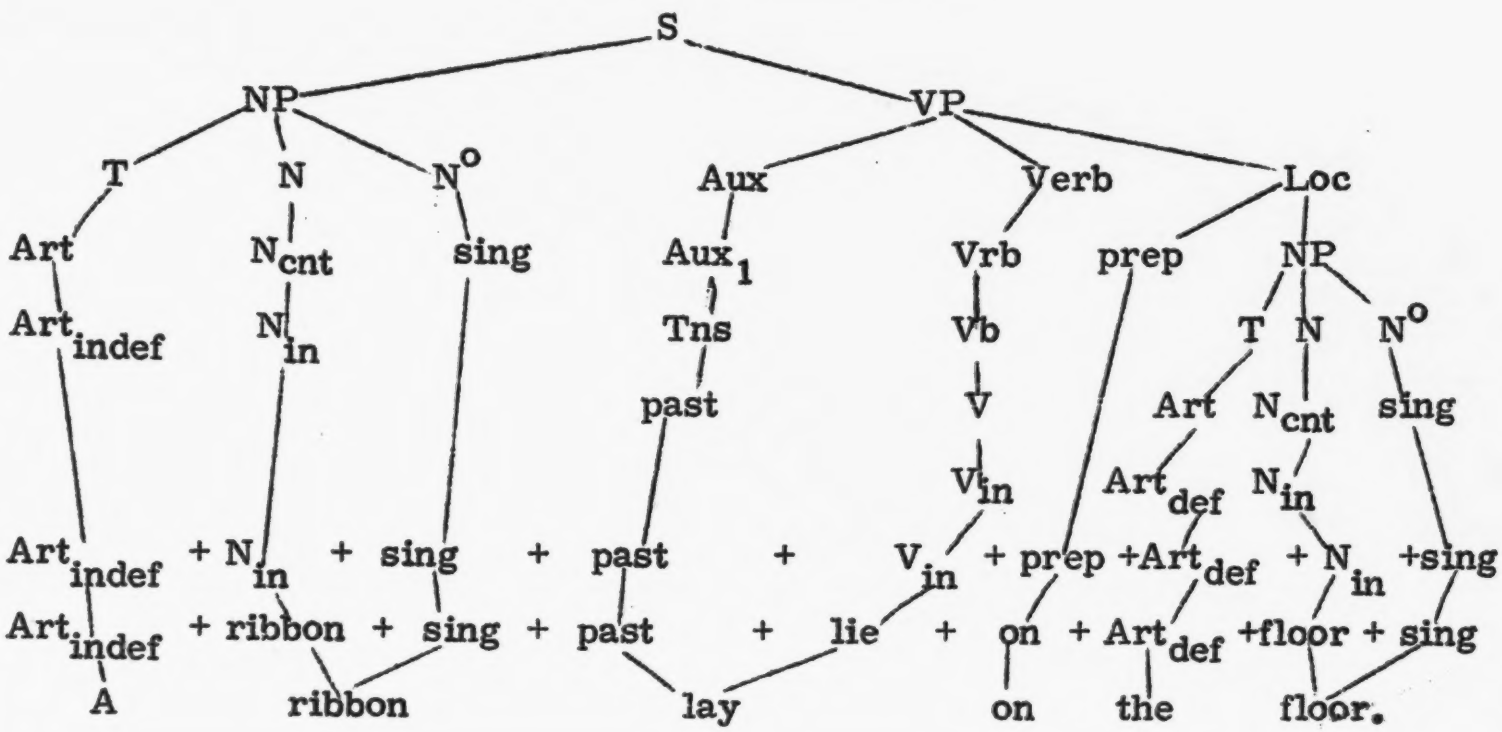
location? Notice that the phrases are exactly like those which act as manner adverbials. That is, words like in and on are also prepositions, and the box and the floor are also NP's.

One form of the place adverbial, then, is preposition + NP. It is possible, therefore, to write a rule which shows that Loc may take several forms. Since we know that words like there, outside, and here also function as adverbials of place, we can list a few of these in our new rule and indicate (by three dots) that there are other examples of this type of Loc. Our new rule, can indicate at least this much.

$$\text{Loc} \longrightarrow \left\{ \begin{array}{l} \text{prep + NP} \\ \text{there, outside, here, . . .} \end{array} \right\}$$

How does this new rule affect our branching diagrams? For example, how would sentence (7) be diagramed?

A ribbon lay on the floor.



Notice that the new rule instructed us to rewrite Loc as Prep + NP. We already have rules (13)--(13) which develop this new NP just as they would any NP found in the sentence.

How would our new rule work if two Loc's appeared in the same sentence, as in sentence (4), "He remained there in the shade."? The first Loc (there) would be a rewrite of the Pr produced by rule (7); the second Loc (in the shade) is the optional Loc which is provided for in Rule 2 (VP $\longrightarrow$ Aux + Verb (Loc))

Exercise 2

Construct branching diagrams for the following sentences:

1. The tools should be in the garage.

2. A robber has hidden inside the freezer.
3. Someone will put the cake in the package.
4. The attendant became ill on the ship.
5. Some soldiers stayed there in the darkness.

C. The time adverbial

In a previous unit, you were introduced to the adverbial of time (Tm). This adverbial, you discovered, could follow any kind of verb. Are the following sentences grammatical?

(8) The leaves are beautiful in the fall.
(9) A woman became president last year.
(10) The administration had trouble then.
(11) Demonstrators broke the windows yesterday.
(12) The sun had risen at noon.

How do you determine if a word or group of words is an adverbial of time? What is the test? Adverbials of time are related to the question "When?" or "At what time?" Are each of the underlined items in sentences (8)--(12) related to these questions? Notice that the verb in each sentence is of a different class. The revised rule which accounts for the time adverbial was written: VP ⟶ Aux + Verb (Loc) (Tm)

There are other kinds of adverbials, however, which seem closely related to the question of time, but which do not convert to the question "When?" or "At what time?" Look at the following sentences:

(13) My mother visits me at times.
(14) The telephone had rung occasionally.
(15) The situation may confuse me sometimes.
(16) The boy has become ill every year.

In each of these sentences there is a single word or phrase (certainly related to the question of time) which seems to be related to the question "How often?"

There are other adverbials which seem closely related to the question of time, but which do not convert to either "When? or "How often?"

(17) The doctor stayed awake all night.
(18) Some pupils were walking around for several minutes.
(19) I worked hard for six years.
(20) The lecture lasted for an hour.

What question do these sentences seem most closely related to? Is the question "How long?" or "For what duration?" Although at this time we will not refine our rules to account for the last two types of adverbials illustrated above, some of you might like to try to write a rule to account for them. Let us call those adverbials which convert to the question "How often?" frequency adverbials; then let us call those time adverbials

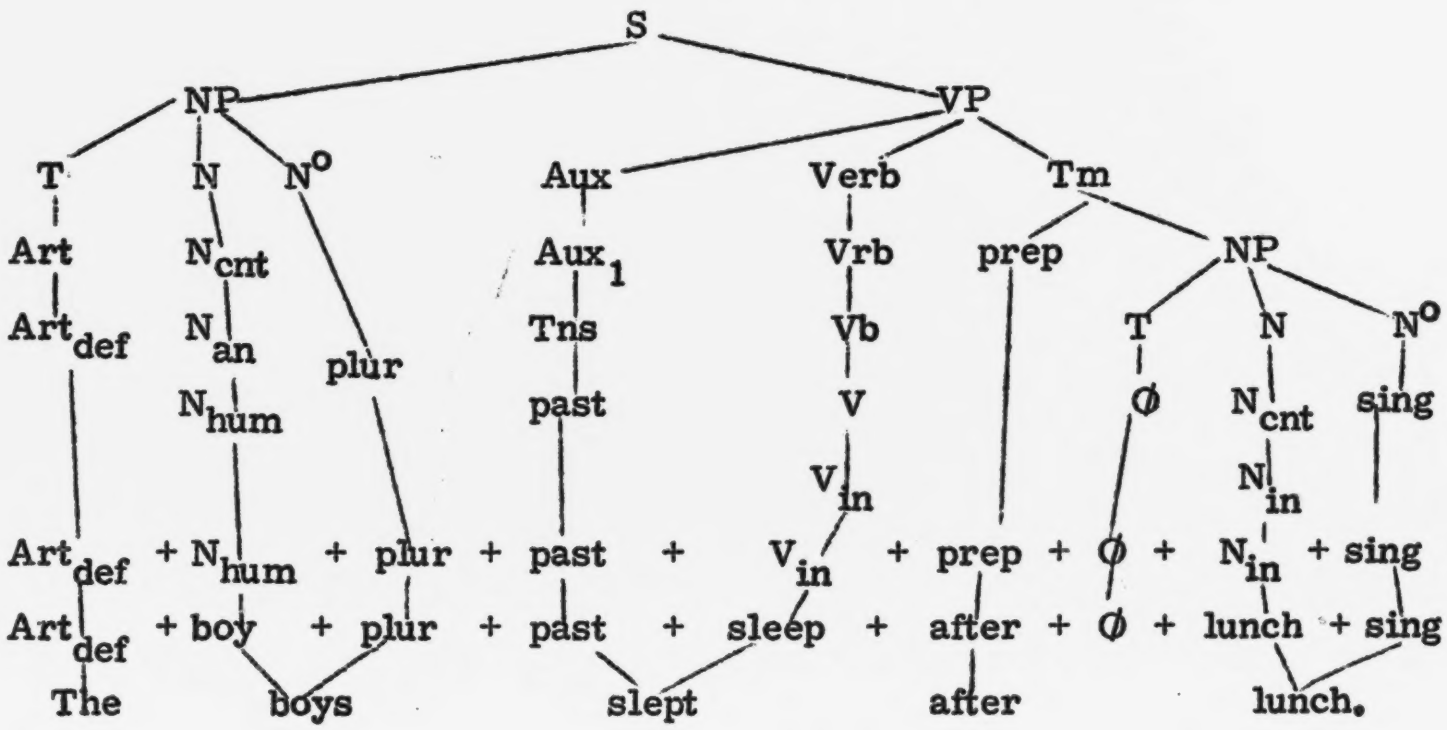
related to the question "How long?" or "For what duration?" durational adverbials. The important thing to remember about them is that they are not the same as the time adverbials (Tm) which are related to the question "When?" or "At what time?"

Like the adverbials of manner and place, the time adverbial (Tm) can consist of single words like then, later, or yesterday. Can you think of other things it might consist of? Groups of words such as in the evening, at night, or by day also answer the question "When?" They are, therefore, time adverbials. They consist of a preposition + NP. Our newest rule (24) accounts for these facts:

$$Tm \rightarrow \left\{ \begin{array}{l} \text{prep + NP} \\ \text{then, yesterday, later, . . .} \end{array} \right\}$$

The branching diagrams will reflect the new rule in the following way:

The boys slept after lunch.



The time adverbial enters the diagram with the verb because it can occur with any class of verbs.

Exercise 3

Part A: Write five sentences which contain an adverbial of frequency. Then write five which contain adverbials of duration. Try to include single-word adverbials as well as those consisting of preposition + NP. Make sure that these adverbials meet the tests mentioned on pages 6-7.

Part B. Draw branching diagrams for the following sentences;

1. Workers notified the employers at midnight.
2. Some nurses got jobs yesterday.
3. A storm moved into the area at dawn.

4. The prisoner lived quietly then.
5. An inmate may enjoy company sometimes.

D. Adverbials of direction

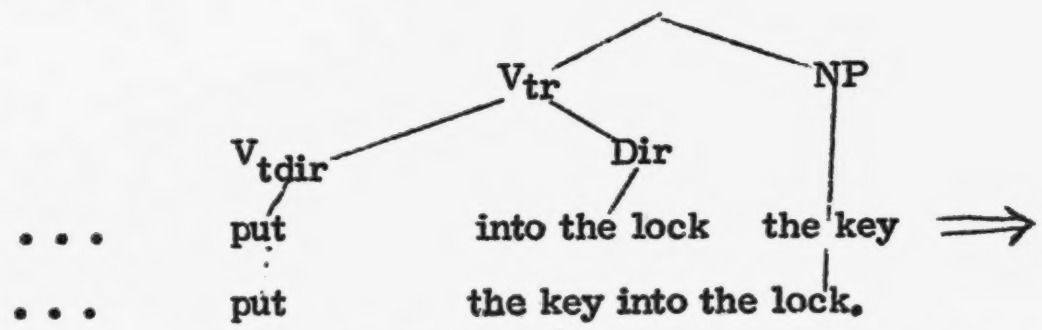
Certain verbs are very often followed by a particular kind of adverbial. In a previous unit you found that a group of intransitive verbs could be followed by adverbials which converted to the question "To what place?" Rule (10) was revised to set this class of verbs off from other intransitive verbs on the basis of this characteristic:

$$V_{in} \longrightarrow \left\{ \begin{matrix} V_i \\ V_{id} \end{matrix} \quad (Dir) \right\}$$

A certain group of transitive verbs are also followed by directional adverbials. He put the key into the lock is an example. This kind of verb is a rewrite of V_{tr}:

$$V_{tr} \rightarrow \left\{ \begin{matrix} V_{tdir} + Dir \\ \cdots \end{matrix} \right\}$$

You may recall that when a directional adverbial enters the sentence with a transitive verb the underlying sentence is ungrammatical because the direction adverbial is out of place. A transformation is necessary to reposition it.



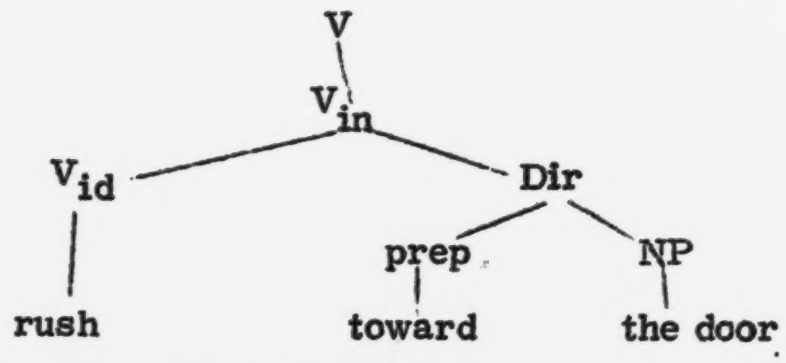
Nowhere in our rules, however, have we specified what the adverbial of direction (Dir) consists of. What are the directional adverbials in these sentences?

(21) The gang had gone inside
(22) A mob pushed the speaker toward the door.
(23) A mouse had been sneaking into the house.
(24) Joe drove the cattle into the barn.
(25) A stream of water was flowing onto the field.

Which words or groups of words in the above sentences convert to the question "To what place?" There are, as you can see, both single words and phrases which function as adverbials of direction: "inside," "toward the door," "into the house," "into the barn" and "onto the field." Our new rule, then, will specify the form that Dir can take:

$$\text{Dir} \longrightarrow \left\{ \begin{array}{l} \text{prep + NP} \\ \text{outside, upwards, seawards, . . .} \end{array} \right\}$$

How will the new rule affect the construction of branching diagrams? For example, how would the directional adverbial in sentence (22) be derived? Dir appears first as a rewrite of V_{in}.



(25)

The rule we just wrote further specifies Dir as prep + NP. NP can be further developed by the early rules (13)--(18). Also, notice that the verbs which take directional adverbs are those verbs which denote motion or movement.

Exercise 4

Construct branching diagrams for the following sentences:

1. The runaway glanced toward the door.
2. Some visitors marched into the classroom.
3. A car was racing down the street.
4. The inspector had flown the plane to Tacoma.
5. The captain gazed seaward thoughtfully.

E. Adverbials of reason

The last type of adverbial we will deal with is Reason. Like place and time adverbials, Reason is an optional item in sentences. What is the test used in identifying reason adverbials? It is accounted for in rule (2), because it can occur with all classes of verbs.

Rule (2) VP $\longrightarrow$ Aux + Verb (Loc) (Tm) (Reason)

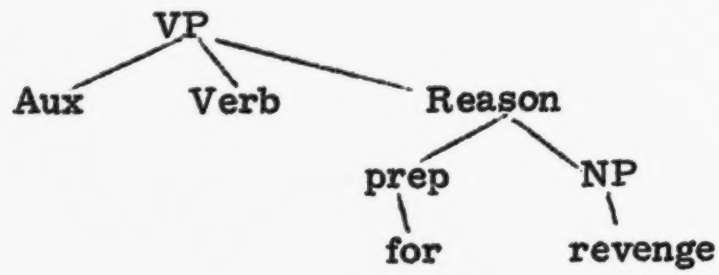
Try to identify the reason adverbials in the following sentences:

(26) The man had murdered for revenge.
(27) The teacher punished him for misbehavior.
(28) The quarterback retreated for a pass.

The phrases at the end of each sentence are related to the question "For what reason?" As you can see, the reason adverbial consists of a preposition (usually for) and an NP. Our new phrase structure rule reflects these facts:

Reason ⟶ prep + NP

The following diagram illustrates how the new rule affects the branching diagrams:



Exercise 5

Write original sentences which contain the following types of adverbials:

1. Five sentences containing both Tm and Loc
2. Five sentences containing both Dir and Reason
3. Five sentences containing both Man and Loc
4. Five sentences containing any three of the following adverbials: Man, Loc, Tm, Reason, and Dir.

III. Order of Adverbials

You have just reviewed the several different kinds of adverbials that we have treated in our study of grammar. By now you should know where each one comes into the phrase structure rules. As you have noticed, the adverbials are generated at the end of the verb phrase; the adverbial is usually the last thing at the end of a kernel sentence.

(1) The boys worked quietly. (Man)

(2) A bomb had landed in the street. (Loc)

(3) Some weapons were arriving in the evening. (Tm)

(4) He walked to the elevator. (Dir)

(5) The tourist tried a bicycle for variety. (Reason)

In the sentences you use every day, this is not always the case. Adverbials are found in various positions throughout the sentence:

(6) The students occasionally visit the library. (frequency)

(7) A vacation is frequently necessary. (frequency)

(8) The boy slowly opened the door. (Man)

(9) Sometimes I get discouraged. (frequency)

Tm frequency
(10) At lunchtime the pupils often get unruly.

In our grammar, we account for these different positions of adverbials by means of transformation rules. That is, we need to write other rules which state, for example, that manner adverbials can move to a position in front of the main verb and that adverbials of frequency can move to a position before the main verb or to a position just after the verb Be. Perhaps you would like to experiment with the exact form these rules would take. Remember to use the double arrow ($\Longrightarrow$) to indicate that a particular structure can become (by structural change) another type of structure:

$$X + Y + Z \Longrightarrow Y + X + Z$$

What happens when several adverbials occur together at the end of a sentence? What order do they take? Our rules generate Loc in front of Tm. Is this the most common order for these adverbials?

Loc Tm
(11) The man lost an umbrella in the park yesterday.
Loc Tm
(12) Cheers arose from the stands then.

Furthermore, both Loc and Tm are generated in front of Reason. If all three occur at the end of the sentence, is this the most common order for them?

Loc Tm Reason
(13) They scrimmaged on the field yesterday for practice.
Loc Tm Reason
(14) The pioneers settled there then for protection.

What happens if still others are added at the end?

Dir Man frequency Tm
(15) The boxer danced away quickly sometimes in the beginning.
Loc Man Tm
(16) The quarterback threw the ball to Bob unwillingly at first.
Loc frequency Tm
(17) They sent food to the room occasionally during the year.
Loc Man frequency Tm Reason
(18) I went to school reluctantly sometimes in the fall for several reasons.

The rules which would account for the relative positions of these adverbials would be very complex. But it seems obvious that there is some flexibility in order. Try to rearrange the adverbials in the sentences above to form other grammatical sentences. Can you discover any regularities about the positions in which they occur? Could you put them in the form of additional rules? These rules will necessarily be very complex, since numberous exceptions will need to be accounted for. You can see why it is simplest to account for the occurrence of the various adverbials in one phrase structure rule and then to reposition them optionally. To do otherwise would involve too many rules.

IV. Adverbials with Embeddings

In order to account for more complex structures in English sentences, we must go beyond the phrase structure rules to transformations. In our phrase structure rules we have taken account of five different kinds of adverbials made up of single words and phrases (prep + NP). Are there adverbial elements in the following sentences which can not be accounted for by the phrase structure rules? Remember that adverbials are related to questions like "When?" "Where?" "Why?" "How?" etc.

(1) The inspector was here at the time when I was here.
(2) The inspector was here when I was.
(3) The fight occurred at the place where the trains cross.
(4) The fight occurred where the trails cross.
(5) A woman became chairman at the time when he resigned.
(6) A woman became chairman when he resigned.

What do the underlined parts seem to consist of? What transformation rules that you already know might possibly account for such constructions? Is the operation likely to be a single-base transformation or a double-base transformation? Is it a conjunctive transformation, or is it an embedding transformation? Could the relative clause embedding account for the underlined parts of sentences (1)--(6)? Look at the following pair of sentences:

(7) A thief stole the knife which I had bought.
(8) The doctor made a mark at the place where the bullet had entered.

In what ways are these sentences similar? Sentence (7) contains two kernel sentences. What are they? Are sentences (9) and (10) the underlying sentences of (7)?

(9) A thief stole the knife.
(10) I had bought the knife. } $\Longrightarrow$

What element do (9) and (10) have in common? Of course, the answer is an NP, the knife. The only requirement that must be met in order for a relative clause embedding to take place is that two sentences contain an identical NP. Can you recall the next steps in the operation?

Consumer: A thief stole the knife.
Source: I had bought the knife.

The source sentence is embedded into the consumer. Wh is attached to the identical NP in the source sentence, and wh + the knife are brought to the front of the source sentence. (Where else have you come across this process?) We then have the ungrammatical sentence

*A thief stole the knife wh + the knife I had bought. $\Longrightarrow$

Next, we change wh + the knife to which (or that), and we have the final sentence

A thief stole the knife which I had bought.

Can any words be deleted and still leave us with a grammatical sentence? How about the word which?

Is it possible to derive sentence (8) in the same way? What are the kernel sentences underlying sentence (8)?

(8) The doctor made a mark at the place where the bullet had entered.

What are the main parts of the consumer sentence? What element comes at the very end of it? Is it an adverbial of place (Loc)? The consumer and source sentences for (8) are:

Consumer: The doctor made a mark at the place.
Source: The bullet had entered at the place. } ⟹

Notice that the two sentences contain identical NP's, the place. As in the other embedding operation, we first attach wh to the identical NP in the source sentence and then move that element (wh + NP) to the front of the source sentence. Notice that the preposition moves with the wh + NP. The result is, of course, an ungrammatical sentence:

*The doctor made a mark at the place at wh + the place the bullet had entered

From this point we may take either of two different paths to produce a grammatical sentence.
Let us look at the first of these.

We may first operate the transformation that converts wh + NP into which, as you have done when embedding adjective clauses. We are, in fact, making use of the same transformation. We now have:

The doctor made a mark at the place at which the bullet had entered.

Now let us examine the second path. Remember that we start from the point where we have the following ungrammatical sentence:

*The doctor made a mark at the place at wh + the place the bullet had entered

We can choose to convert at wh + the place to the word where.
instead of which
The doctor made a mark at the place where the bullet had entered.

This is now a grammatical sentence. Let us go back and consider our reasons for converting the words at wh + the place to the word where. What is at the place in the source sentence? What form does it have? Loc can be rewritten as either prep + NP or a word like there, outside, or here. At the place is, of course, a place adverbial (Loc) of the form prep + NP. You remember that wh + Loc ⟹ where. Thus, whenever the wh is attached to an NP that is part of a place adverbial, the whole structure (at wh + the place) may be converted to the word where.

Can we delete anything from the resulting sentence? Can we write for instance, the following?

The doctor made a mark where the bullet had entered.

This last transformation may operate only when the adverbial of place (Loc) is the phrase at the place. Otherwise we could not discover what kernel sentences were combined to produce the final grammatical sentence:

The doctor made a mark where the bullet had entered.

Where the bullet had entered is thus a source sentence which has been embedded into the consumer sentence. The doctor made a mark at the place. Like the adverb of location that it replaced, the embedded sentence is related to the question "Where?" The fact that the NP (the place) is a part of an adverbial of location (Loc) in the underlying structure does not prevent it from accepting embeddings. In fact, it is just because the adverbial does contain an NP that we are able to make use of the adjective embedding transformation. And in this way we have found a simple way to account for a large part of our grammar.

If we can embed sentences in place adverbials, it might also be possible that other adverbials would accept embeddings. Let us try a pair of sentences that share an NP in a time adverbial. Look at sentences (5) and (6) again.

(5) A woman became chairman at the time when he resigned.
(6) A woman became chairman when he resigned.

What are the underlying sentences for both of these sentences? Could the following be the source and consumer sentences for (5)?

Consumer: A woman became chairman at the time.
Source: He resigned at the time. $\Longrightarrow$

Notice that the source and consumer sentences share a common NP, and also notice that the NP occurs in an adverbial of time. At the time is one kind of time adverbial. We can rewrite the symbol (Tm) as either prep + NP or as a single word like yesterday, then, evenings, etc. At the time is, of course, prep + NP.

The embedding proceeds exactly as it did in our previous illustration. When the source is embedded into the consumer, we attach wh to the identical NP in the source sentence. Then we move the unit in which it occurs (prep + wh + NP) to the front of the source sentence:

*A woman became chairman at the time at wh + the time he resigned

But again we convert wh + NP to which

A woman became chairman at the time at which he resigned.

As in the case of the place adverbials, we have an alternative path for

embedding time adverbials. Since the NP that has the wh attached to it is a part of a time adverbial, what word should replace it? The right answer is, of course, the word when. (wh + Tm ⟹ when)

*A woman became chairman at the time at wh + the time he resigned

A woman became chairman at the time when he resigned.

Thus we get a grammatical sentence by substituting the word when for the wh + the time adverbial in the source sentence. Can the time adverbial in the consumer sentence be deleted in the sentence as it now stands? The resulting sentence is identical with sentence (6) used as an example on the previous page:

A woman became chairman when he resigned.

The only remnant of the time adverbials in both source and consumer sentences is the word when. This last transformation may take place only when the time adverbial is the phrase at the time. When we find a sentence like

A woman became chairman when he resigned.

and wish to reconstruct it so that we can discover its underlying structure, we are limited. We know that when comes from wh + Tm, but it is impossible to say what definite time adverbial it comes from. We therefore have to understand that it is derived from the indefinite at the time. Otherwise we couldn't reconstruct it. And if we had two sentences

A woman became chairman yesterday when he resigned.

and

A woman became chairman at the time when he resigned.

we can delete the time adverbial at the time in the second because we know that when has derived from at + wh + the time. But we can not delete yesterday from the first because there would then be no way to discover that when derived from wh + yesterday.

In sentences (1)--(6) on page 12 the words when and where seem to function almost like relative words that enter the sentence during the embedding of adjective clauses. You probably remember that these words are who (for human nouns), which (for non-human and inanimate nouns) and that (for any kind of noun). Similarly, when enters the sentence as a relative word in the place of prep + wh + NP, but only if the prep and NP are parts of a time adverbial. In the same way, where enters the sentence as a relative word in place of prep + wh + NP whenever the prep and NP are parts of a place adverbial.

Do embeddings take place in exactly the same way with the other adverbials: manner, direction, or reason? Would you accept the following sentences as being grammatical?

(11) The carpenter finished it in the way in which I liked it.

(12) I went to the place where I had met him.
(13) Our chairman resigned for the reason that he was ill.

What kinds of adverbials are present in the consumer sentences that underlie each of the above? In sentence (11) there is a manner adverbial (in the way), in sentence (12) there is a directional adverbial (to the place), and in sentence (13) there is a reason adverbial (for the reason). Try to discover the ways in which these embeddings (the underlined portions) differ from the two that we have already discussed, and the ways in which they are alike.

Exercise 6

Part A: What are the kernels underlying the following sentences?

1. He travels at the time when the weather is bad.
2. The visitors came at the time when she was busy.
3. I left the tools at the place where the view is best.
4. The pirate stood on the place at which the treasure lay.
5. The fool had gone to the place where the danger was.
6. A pupil had protested when I made the assignment.
7. Some weeds were growing where I had buried it.
8. The workers remained where I had left them.
9. The accident occurred when I was driving carefully.
10. The boy who was here left yesterday.

Part B: Construct branching diagrams for the kernel sentences identified in Part A.

Part C: Show in detail how each of the sentences in Part A have been derived from underlying kernel sentences. For example:

The guests left when I entered the room.

From: Consumer - The guests left at the time.
Source - I entered the room at the time. } ⟹

wh-embedding: - The guests left at the time at wh + the time I entered the room ⟹

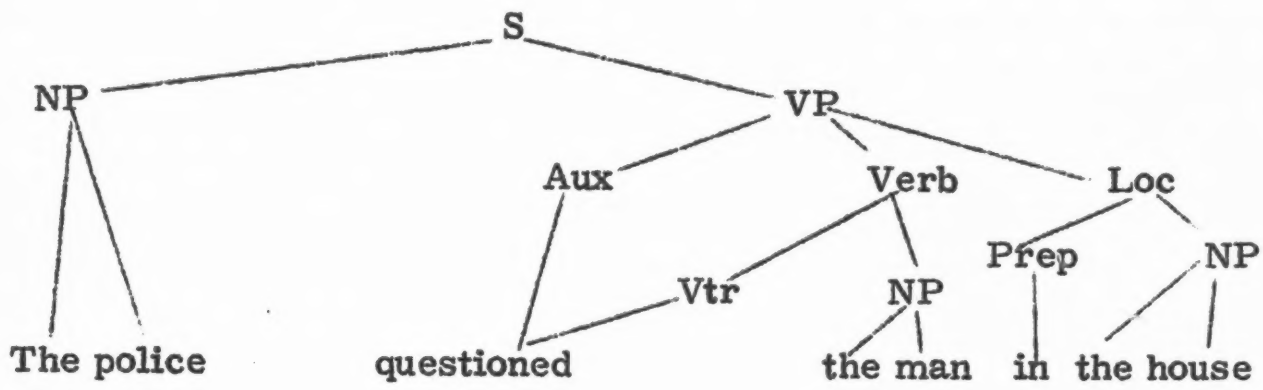
Conversion: - The guests left at the time when I entered the room. ⟹

deletion: - The guests left when I entered the room.

Some adverbials can easily be confused with other kinds of structures. Look at the following sentences:

(14) The police questioned the man in the house.
(15) A boy in the room had a cold.
(16) The window upstairs is open.
(17) The upstairs window is open.
(18) The man in line will be president.

In sentence (14) the phrase "in the house" could be accounted for by which phrase structure rule? Rule (2) states that an adverbial of place (Loc) is an optional element in the verb phrase.



This sentence means that the police questioned the man in a particular place, the house. The adverbial of place, in the house, is related to the question "Where?"

Can you think of another way that this sentence could be interpreted? Can it be explained by means of a transformation? Could in the house have come from another source sentence?

Consumer: The police questioned the man.
Source: The man is in the house. ⟹

If these two sentences are the kernels from which (14) is made, then what is the origin of the phrase "in the house"? It is, of course, a Pr that is generated with the verb Be in the source sentence. What kind of Pr is it? You remember that Pr's can be one of three things: an NP, an Adjective, or an adverbial of location (Loc). "In the house" is obviously an adverbial of place.

If this is the source of in the house, a regular relative clause embedding has taken place. The consumer and source sentences do have an identical NP (the man), so the normal embedding operation can take place.

*The police questioned the man wh + the man is in the house. ⟹

The police questioned the man who is in the house. ⟹

Finally, by deletion of the relative word who, the auxiliaries, and the verb Be, we get the grammatical sentence

(14) The police questioned the man in the house.

If the sentence has been derived in this way, it means that the police questioned a particular man, the one who is in the house.

Whenever we can account for the same sentence by two different routes through our grammar--that is, by a different sequence of rules--we say that a sentence is ambiguous. By ambiguous, we mean that a sentence

can have at least two different structural interpretations. It can mean two different things. When you find sentences which are ambiguous you can often explain this ambiguity by trying to find two different ways in which they might have been derived. Sentences (15)--(18) are not ambiguous like (14), but they do have something else in common. They all contain adverbials that are the remnants of relative clause embeddings. The underlined parts of each sentence are all that remains of a source sentence that had as one of its parts an adverbial of place or time. These adverbials (in the room, upstairs, in line) now appear to be most closely related to an NP, the NP in the consumer sentence which accepted the original embedding.

Exercise 7

Make a list of other sentences which are ambiguous--that is, can have two or more different meanings simultaneously. Do not use as examples those sentences in which the ambiguity lies in the meanings of a single word. For instance, "The man caught a fly" is ambiguous because of the many meanings of fly. Try to think of examples where there is a structural difference between the two interpretations. For example, "The boys have used clothing" is ambiguous. One interpretation is that the boys have clothing which has been used. What is the other meaning? Another example is the sentence "They are fighting roosters." Try to find out what the source and consumer sentences are in one of the interpretations of this sentence.